Attachment H

Proposal # 2001- B203 (Office Use Only)

PSP Cover Sheet (Attach to the front *of* each proposal)

Proposal Title: Invasive Spartina Project (ISP)
Applicant Name: California Coastal Conservancy
Contact Name: Nadine Hitchcock Manager, S.F. Bay Area Conservancy
Mailing Address: 1330 Broadway, 11th Floor, Oakland, CA 94612
Telephone: (510) 286-4176
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Email: nhitchcock@scc.ca.gov

Amount of funding requested: $ 1,893,161

Some entities charge different costs dependent on the source of the funds. If it is different for state or federal funds list below. Not applicable

State cost _____ Federal cost _____

Cost **share partners?** X Yes ___ No $200,000

Identify partners and amount contributed by each $382,840/yr see Table 4, CA Coastal Conservancy

Indicate the Topic for which you are applying (check only one box).

- ☐ Natural Flow Regimes
- ☑ Nonnative Invasive Species
- ☐ Channel Dynamics/Sediment Transport
- ☐ Flood Management
- ☐ Shallow Water Tidal/ Marsh Habitat
- ☐ Contaminants
- ☐ Beyond the Riparian Corridor
- ☐ Local Watershed Stewardship
- ☐ Environmental Education
- ☐ Special Status Species Surveys and Studies
- ☐ Fishery Monitoring, Assessment and Research
- ☐ Fish Screens

What county or counties is the project located in? 10 Bay Area Counties

What CALFED ecozone is the project located in? See attached list and indicate number. Be as specific as possible 2.1 - 2.5 16

Indicate the type of applicant (check only one box):

- ☑ State agency
- ☐ Public/Non-profit joint venture
- ☐ Local government/district
- ☐ University
- ☐ Other: _____
- ☐ Federal agency
- ☐ Non-profit
- ☐ Tribes
- ☐ Private party

Indicate the primary species which the proposal addresses (check all that apply):

- ☐ San Joaquin and East-side Delta tributaries fall-run chinook salmon
- ☒ Winter-run chinook salmon
- ☐ Spring-run chinook salmon
- ☐ Late-fall run chinook salmon
- ☐ Fall-run chinook salmon
- ☐ Delta smelt
- ☐ Longfin smelt
- ☐ splittail
- ☐ Steelhead trout
- ☐ Green sturgeon
- ☐ Striped bass
- ☐ White Sturgeon
- ☐ All chinook species
- ☐ Waterfowl and Shorebirds
- ☐ All anadromous salmonids
- ☒ Migratory birds
- ☐ American shad
- ☒ Other listed T/E species: California clapper rail, Salt Marsh Harvest Mouse, Soft-bird's beak

Indicate the type of project (check only one box):

- ☐ Research/Monitoring
- ☐ Watershed Planning
- ☒ Pilot/Demo Project
- ☐ Education
- ☐ Full-scale Implementation

Is this a next-phase of an ongoing project? Yes X No ___

Have you received funding from CALFED before? Yes X No ___

If yes, list project title and CALFED number Introduced Spartina Eradication Project #11332-0-J001

Have you received funding from CVPIA before? Yes ___ No X

If yes, list CVPIA program providing funding, project title and CVPIA number (if applicable):

N/A

By signing below, the applicant declares the following:

- The truthfulness of all representations in their proposal;
- The individual signing the form is entitled *to* submit the application on behalf of the applicant (if the applicant is an entity or organization); and

The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section 2.4) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

Marcia Grimm

Printed name of applicant

Signature of applicant

Executive Summary

Project Title: Invasive ***Spartina*** Project (ISP)
Amount Requested $1,893,661.00 Cost-Share: $ 200,000 In Kind- 382,840/yr.
Applicant California Coastal Conservancy (SCC)
Nadine Hitchcock, Manager, San Francisco Bay ***Area*** Conservancy
1330 Broadway, 11th Floor
Oakland, CA 94612 Phone: 510-286-4176
Fax: 510-286-0470 **E-mail:** nhitchcock@scc.ca.gov

Anticipated participants: **Administration:** California Coastal Conservancy (SCC)
Management: Debra Smith, Shannon Klohr.
Mapping/Monitoring/Assessment: Dr. **Josh** Collins, S.F. **Estuary** Institute (SFEI) and the Regional Wetland Monitoring Program (RWMP)
Environmental Compliance Services: Grassetti Environmental Consulting
Wildlife Biologist: Jules Evens, Avocet Research
Focused Research USDA Dr. Lars Anderson, UC Davis : Dr. Don Strong, Dr. Debra Ayres, Point Reyes Bird Observatory (PRBO): Gary Page,
Oversight: Bay Area Wetland Planners Group (BAWPG), RWMP Science Advisors, TeamSpartina: Stakeholders group and community list-server.

Principal Collaborators: USFWS, RWMP (USEPA), CDFG, SF **Bay** Joint Venture, Bay Area Counties and Cities and potentially all willing landowners with populations of invasive ***Spurtinu..***

Spurtinu alterniflora is a non-native invasive species of cordgrass that has spread to an estimated one thousand solid acres in the intertidal zone of San Francisco Bay since the mid-1970's. *S. alterniflora* is capable of growing far down the intertidal gradient where it accretes and stabilizes sediment and has the potential to convert much of the open tidal flat habitats of San Francisco Bay into vast stands of cordgrass meadows. Hybridization of *S.* alterniflora with the common, native ***Spartina foliosa,*** has been identified as a threat to the native species which, if not controlled, will result in local extinction. Additional negative ecological impacts attributed to ***Spartina alterniflora*** include hydrologic alteration of salt marsh channels, displacement of native species and degradation of endangered species habitat. As a result of these impacts *Spartina alterniflora* threatens the success of a number of Calfed Bay Delta Ecosystem Restoration Program goals.

The California Coastal Conservancy initiated a regionally coordinated control program for invasive ***Spartinu*** in **1999** with funds from the Conservancy, Calfed and National Fish and Wildlife Foundation. The program has raised awareness of the negative ecological impacts of invasive ***Spartinu,*** built a **strong** base of support bay wide, and **is** addressing environmental compliance requirements. This proposal requests funding to expand the project in order to meet the following three objectives: 1) Undertake **an** expanded effort to plan and implement control of invasive ***Spurtinu*** to prevent an invasion of San Pablo and Suisun Bays and significantly reduce invasive ***Spurtinu*** populations bay wide. 2). Contribute to the overall scientific understanding of how ecological engineers *can* physically alter the **S.F.** Bay ecosystem and specifically, how the process of introgression can potentially lead to extinction of native species. 3) Build **a** bay-wide infrastructure to detect and prevent future invasive species in the intertidal zone.

C. Project Description

1. Statement of the Problem

Spartina alternifora , a non-native, invasive species in San Francisco Bay, is a good example of an ecosystem engineer (Ayres et al, 1999). This categorization is reserved for those species with particularly great habitat effects, altering the physical and chemical environment (Jones et al. 1997). Four species of *Spartina* were introduced into San Francisco Bay for restoration in the mid-1970's. (See Table 1) Of these species, *Spurtina alterniflora* has spread the most rapidly and has resulted in the greatest negative ecological impact. In roughly twenty five years it has colonized more than 1,000 solid acres of the intertidal zone (Smith, pers. comm). Indeed, *S. alterniflora* is more vigorous than native **S.** *foliosa:*. It initiates growth earlier in the spring, has more live leaves per plant throughout the year, produces almost 10-fold the above ground and twofold the below ground bio-mass, is 60 cm taller and spreads laterally 1.5 times faster (Callaway & Josselyn 1992, Ayres 1999). In competition, 75% of cleared patches are colonized by laterally spreading **S.** *alterniflora* which has a higher potential for sexual reproduction than native ***S.*** *foliosa,* as assessed by flower production, seed set, and seed germination. *S. alternifora* grows as high or higher in the marsh, and from 9 to 20 cm lower than its native cogener. (Ayres, 1999). Additionally, *Spartina spp.* disperse by floating seed and clonal fragments and without control, seeds will flush out of the Golden Gate and ultimately find their way into estuaries at Bolinas, Drakes Estero, Tomales Bay and Bodega Bay (Daehler and Strong 1996). Researchers predict that without control in San Francisco Bay, invasive *Spartina* will continue to accelerate its own rapid spread northward to colonize the extensive tidal flats of San Pablo Bay, the saline reaches of the estuary along the Petaluma and Napa Rivers, and as far east as Suisun Bay. (Atwater et al. 1979; B. Grewell, personal observation, Ayres 1999) ***(See*** Figure 1.)

A similar pattern of colonization by the related species *Spartina anglica* has threatened estuaries in Washington state. The former Washington Department of Game first observed 15 acres of *Spartina anglica* in 1979. By 1999 more than 9,000 solid acres were spread over 8,000 acres of tidal flats. (WSDA.1999).

Salt marsh habitat in San Francisco Bay has largely been diked, drained and filled over the last century (Macdonald 1977). The current, highly fragmented distribution of salt marshes represents a fraction of the original extent of this habitat. The new **US** Fish and Wildlife Draft Recovery Plan for Tidal Marshes of Central and Northern California recommends eradication of *S. alternifora*. The report cites multiple reasons for this recommendation including their conclusions that invasive *Spartina* destroys the physical integrity of channel habitat and that *Spartina* colonization precludes the success of recovery efforts by reintroduction. (USFWS *2000).* Invasive *Spartina* is poised to undermine to a significant degree the habitat benefits gained by converting thousands of acres of diked marsh to tidal wetlands. In addition, invasive *Spartinu* threatens to degrade the habitat for the federally endangered plant soft birds-beak, the California clapper rail and the salt marsh harvest mouse.

Some scientists have suggested that the ability of *S. alternifora* to hybridize with native **S.** *foliosa* makes it the most menacing of the more than 200 known non-indigenous species in San Francisco Bay, the "world's most invaded estuary" (Cohen and Carlton, 1998). Hybridization occurs readily in San Francisco Bay between non-native *Spartina alternifora* and native *Spartinafoliosa* to produce hybrid swarms. (Daehler and Strong 1996). Hybridization can generate large numbers of highly fit genotypes, more vigorous than one or both parental species. The probable ecological outcome can be seen from the results of the spread of hybrid **S.** *anglica* in England 100 years ago. After hybridization and chromosome doubling led to the formation of S. *anglica,* this hybrid was sufficiently vigorous to displace the native

European cordgrass in the English marshes and even the introduced *Spartina alterniflora* parent. Invader genes have spread rapidly through San Francisco Bay cordgrasses since the 1970's introduction. California cordgrass is already almost completely absent from three marshes in San Francisco Bay, where interspecific hybrids comprise roughly half of the plants and the invader the other half (Ayres et al., 1999). Extinction of entire native species is probably not an unusual outcome of hybridization with invaders (Rieseberg 1001, Ellstrangd 1992, Rhymer and Simberloff. 1996) The specific threat of local extinction of native *Spartina* by introgression of *Spurtina alterniflora* has prompted the recommendation that S. *foliosa* be reviewed for candidate listing (USFWS 2000).

The invasive *Spartina* threatenes to fill in mud flat habitat. Vast, unvegetated, mud flats are a hallmark of middle and lower intertidal zones in Pacific estuaries and are the habitat basis for San Francisco Bay being one of four Audubon Society "Hemispheric Reserves'' for shorebirds. Because the invasive *Spartina alterniflora* and its hybrids grow taller than the native *S. foliosa*, they grow much farther down the intertidal plane. Continued colonization of tidal flats over time has the potential to convert the tidal flats of the bay into vast stands of hybrid and invader cordgrass which readily accrete and stabilize sediments causing a rise in elevation. (Ayres et al, 1999) The lower intertidal limit of growth of *S. alterniflora* in San Francisco Bay has not been reached. At San Bruno, the alien *S. alterniflora* and hybrids have grown down to approximately .9 m below mean higher high water line, MHHW, but regressions from the intertidal range at this site in the Bay predict that pure alien cordgrass will grow as low as 1.1 m below MHHW (Daehler and Strong, 1996). The spread of *S. anglica* in England exemplifies the threat to bird habitat. As *S. anglica* spread, the numbers of wading birds were reduced in invaded marshes. These birds feed upon open mud but not within *Spartina* (Goss-Custard et al. 1995). Rapid sediment accretion elevated invaded English marshes by as much as 4 cm/yr and periodic dieback silted navigation channels (Ranwell 1964). Today dense swards of *S. anglica* remain in some English estuaries changing navigational routes and estuary flow patterns (Raybould 1998).

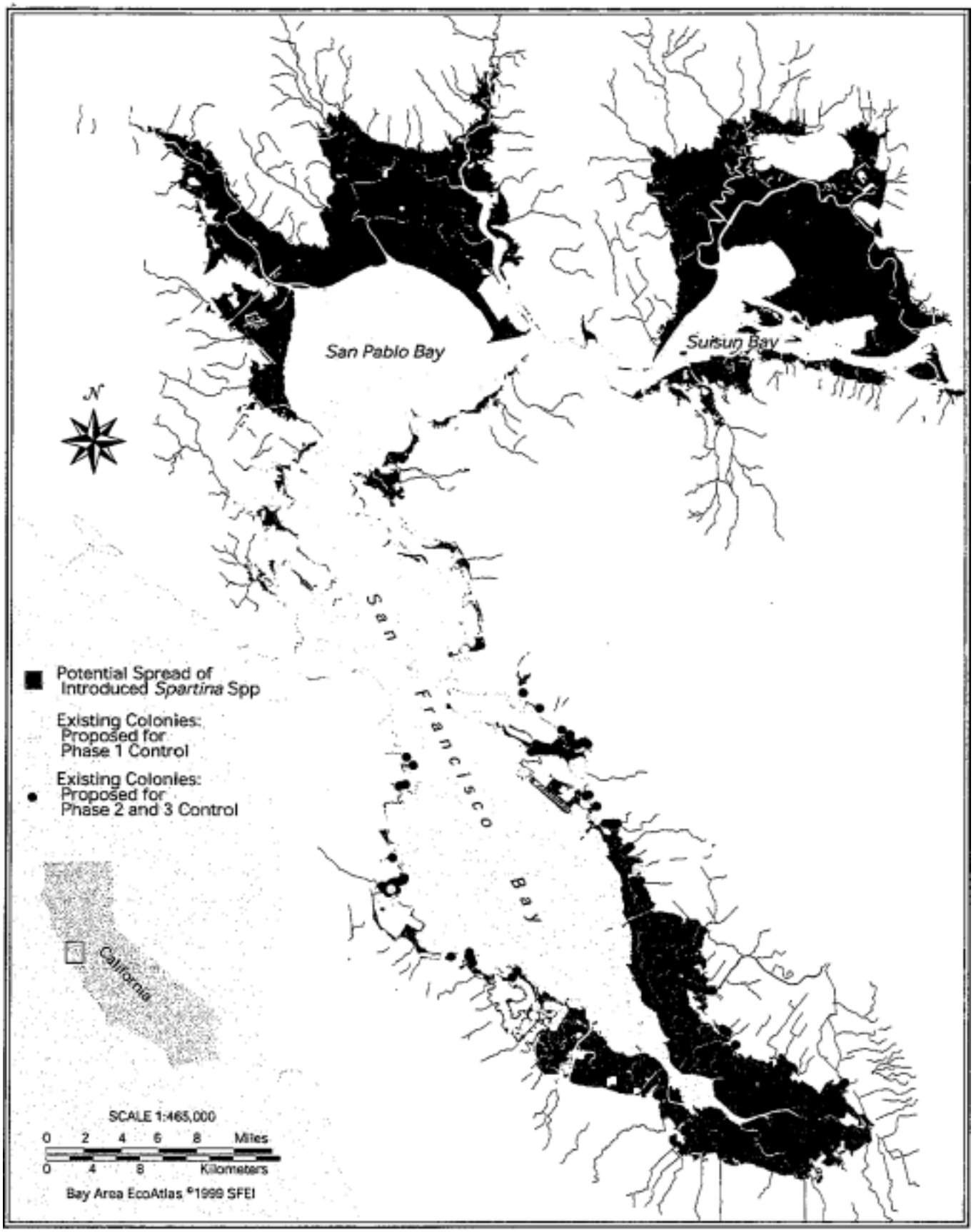
Table 1

Spartina Species	Growth Range	Est. #of acres in S.F. Bay	Known Locations
S. *alternifora*	tidal flats low-mid intertidal	1,000	Widespread south of the S.F. Bay Bridge. Emeryville Crescent, Alameda County Richardson Bay, Marin County
S. densiflora	middle-upper intertidal-'	20-30	Corete Madera Creek, Marin County Larkspur Landing, Marin County Point Pinole Reg. Shoreline, Contra.-Costa County
S. *patens*	middle-upper intertidal	<1.0	Benecia State Recreation Area, Solano county
S. patens(?)		?	San Bruno Slough, San Mateo County
S. *anglica*	lower intertidal	<0.1	Creekside Park, Marin County

In summary, researchers and resource managers in the region are alarmed by the rapid spread of invasive *Spartina* . Continued regional colonization of salt marshes and tidal flats resulting in vast meadows of cordgrass will cause further degradation of endangered species habitat, direct collapse of native species, and a probable negative impact on migratory shorebird populations.

There are three objectives of this project: 1) Undertake an expanded effort to plan and implement control of invasive *Spartina* to significantly reduce existing invasive Spartina populations and prevent an invasion of San Pablo and Suisun Bays. 2). Contribute to the overall scientific understanding of how ecological engineers can physically alter the S.F. Bay ecosystem and specifically, how the process of introgression may potentially lead to the extinction of native species. 3) Build a bay-wide infrastructure to detect and prevent future invasive species in the intertidal zone.

Figure 1.


San Pablo Bay
Suisun Bay
San Francisco Bay
N
Potential Spread of Introduced *Spartina* Spp
Existing Colonies: Proposed for Phase 1 Control
Existing Colonies: Proposed for Phase 2 and 3 Control
California
SCALE 1:465,000
0 2 4 6 8 Miles
0 4 8 Kilometers
Bay Area EcoAtlas ©1999 SFEI

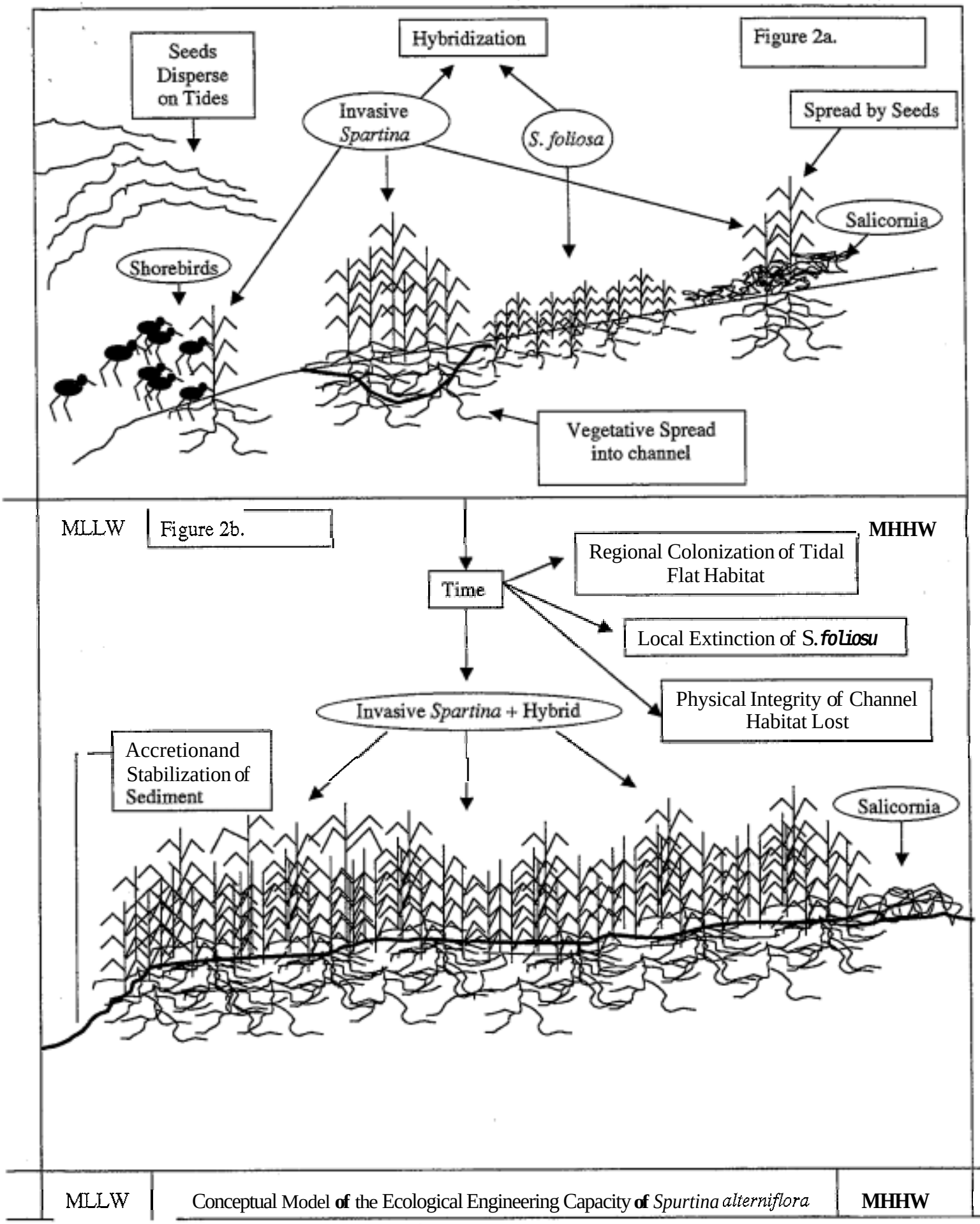


Figure 2a.
Seeds Disperse on Tides
Hybridization
Invasive Spartina
S. foliosa
Spread by Seeds
Salicornia
Shorebirds
Vegetative Spread into channel
MLLW
Figure 2b.
MHHW
Regional Colonization of Tidal Flat Habitat
Time
Local Extinction of S. foliosu
Physical Integrity of Channel Habitat Lost
Invasive Spartina + Hybrid
Accretionand Stabilization of Sediment
Salicornia
MLLW
Conceptual Model of the Ecological Engineering Capacity of Spurtina alterniflora
MHHW

b. Conceptual Model. (See Figure 2)

Figure 2a. indicates the main physical and biological processess leading to colonization by S. *ulternifloru.* Figure 2b illustrates the impacts of S. *alterniflora* colonization on the intertidal zone over time.

c. Hypothesis Being Tested

Given the documented ecological engineering capacity of invasive *Spurtinu* and given that successful methods of control are available for use in San Francisco Bay, we propose that a major control effort could still reverse the expansion of invasive *Spurtinu* bay wide and prevent a major invasion of San Pablo and Suisun Bays if implemented immediately. This presumes that, as preliminary sampling suggests, extensive hybridization has not yet occurred in San Pablo Bay and is limited in the far reaches of the South Bay.

d. Adaptive Management:

Preparing this grant proved to be an "evaluate and assess node" in our adaptive management process. An evaluation of ISEP produced the following:

The Introduced *Spurtinu* Eradication Project (ISEP) will remove "Eradication" from its name until the feasibility of full eradication is more adequately addressed. ISEF' will become the less cumbersome Invasive *Spartina* Project (ISP)

ISP remains, under the administration of the Coastal Conservancy the best possibility for a successful regional *Spartinu* control.

ISEP has carefully measured the rate for maximum project expansion without overwhelming existing staff and resources or trying to predict future needs without adequate input.

ISP will prioritize and treat outlying populations to prevent further spread of hybrids into *S. foliosa* populations. Due to the region wide scale of this project, ISP should remain at a large scale demonstration project level and expand in a measured way.

ISP should consider the provocative propositions regarding successfully integrating citizens in adaptive management by B. Shindler. (Shindler, 1999)

A high degree of scientific understanding exists regarding the ecology, reproductive capacity, and specific impacts associated with the spread of invasive *Spurtinu.*. Specific "gaps in knowledge" have been identified and are listed below:

- What is the current distribution of hybrids in San Francisco Bay ? (Subject of focused research and monitoring in this proposal)
- How long will it take perturbed "managed" areas to recover. (Subject of focused research and monitoring in this proposal)
- What will be the genetically based working definition of control considering the degree of hybridization and can a genetic index be developed correlating degree of ecological engineering capacity to the percent of hybridization. (Currently being discussed).
- Removal of *Spartinu* on tidal flats should restore them to their unvegetated state no further consideration of what to plant to replace removed vegetation is required. In higher elevation areas, where invasive *Spurtinu* is removed, native *salicornia*, rapidly establishes. What is the best protocol for marshes where large amounts of hybrid populations are removed in order to restore appropriate vegetation (Currently being discussed).

e. Educational Objectives/Informational Benefits

ISP will contribute information to CALFED discission makers regarding ecosystem wide impacts of non-native species. The control effort will provide an estimate of the scale of effort and cost required to control an invasive species, once established, particularly one with ecological engineering capacities. Focused research will contribute to increased scientific understanding of how the collapse of native species can occur due to introgression by invaders. Our management management approach relies heavily on partnership, collaboration, and public involvement . This approach differs significantly from other San Francisco Bay/Delta invasive projects (i.e. not a mandated effort under CDFA, Dept. Boating and Waterways) and therefore, can serve as a comparative management model.ISP will be training a network of interagency and independent field biologists, restorations project managers and citizen botanists as part of its information exchange approach. At all opportunities for contact, especially in the context of workshops, ISP will place invasive *Spartina* in the context of the national crisis of ecosystem invasions and the importance of preventing new introductions. This effort should therefore create an infrastructure that will facilitate the detection and management of future non-native invasive species in the intertidal zone.

2a. Location and/or Geographic Boundaries of the Project. (See Figure 3)

b. Approach

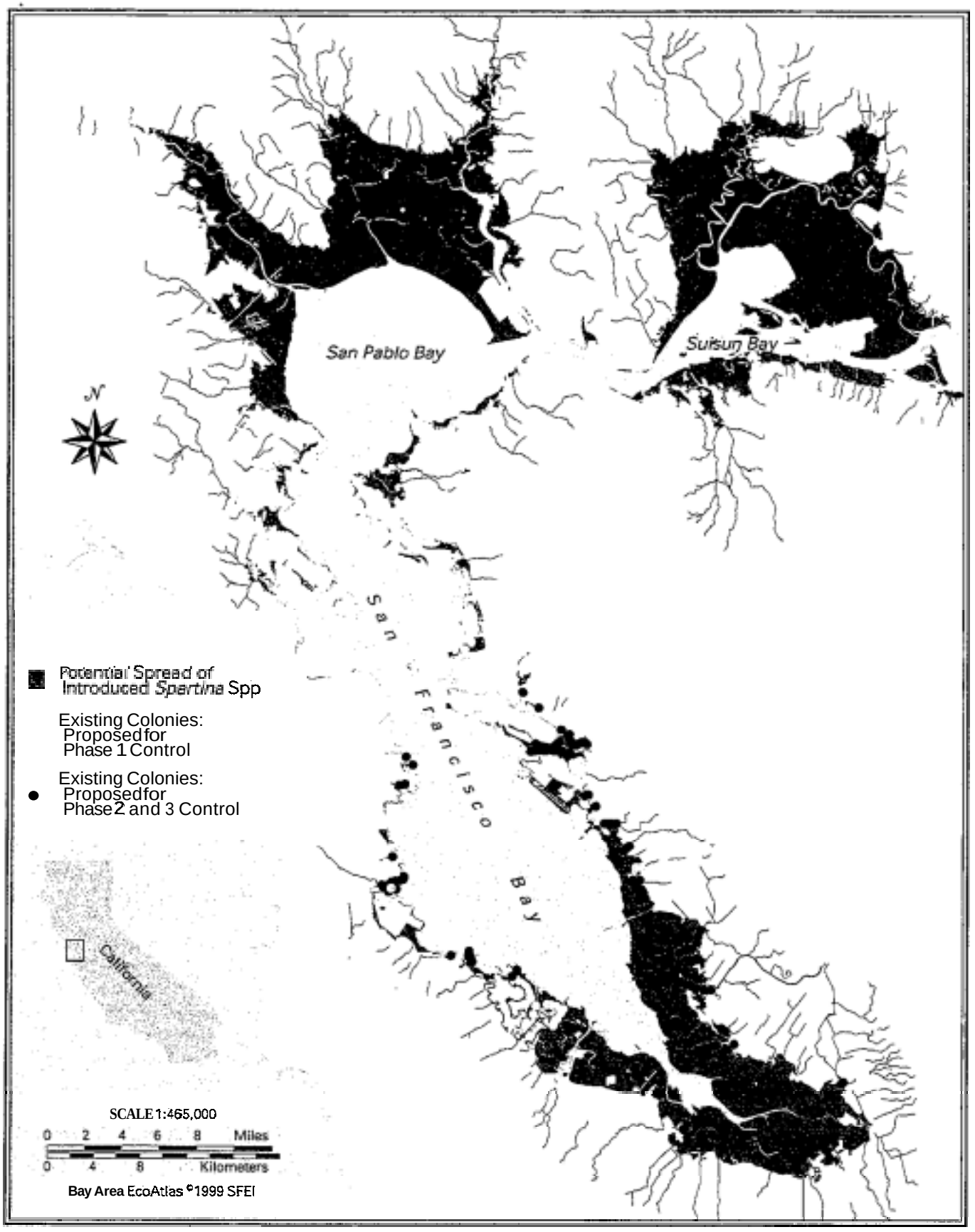
ISP will identify and triage specific populations for control based on blocking dispersal, regional habitat priorities and flood control concerns. ISP will then disseminate funding for control work to landowners and agencies with *Spartina* populations. ISP will ensure proper employment of control techniques and monitor to evaluate regional progress. Expertise will be passed by ISP field coordinators to landowners and managers before, during and after control work. Field coordinators will be assigned to specific segments of the bay (see Figure 4). Additionally, ISP will disseminate information regarding precautions and restrictions imposed by USFWS and DFG to protect endangered species in marshes designated for control. The Conservancy is contracting for a joint programmatic EIR/EIS which will serve as compliance for all landowners, (expected completion date 6/01)This comprehensive document addressing all foreseeable environmental concerns will serve all as environmental compliance for landowners controlling *Spartina*. ISP will initiate and organize meetings among scientists, managers, and the public, in order to stimulate discussions, decisions and commitments. Decisions will be guided by the results of monitoring, focused research (see below), and logistical field experience. Oversight for the program will occur in regular reports to the Bay Area Wetland Planners Group. The scientific advisory panel for the Regional Wetland Monitoring Program will review documents. Figure 5 illustrates the proposed Management Structure of ISP. See Figure 5. For a discussion on control techniques see Feasibility.

Management Concerns and Proposed Focused Research Response

Management Concern: The key to forestalling a massive invasive *Spartina* invasion of the San Pablo and Suisun Bays is the early detection of non-native cordgrasses. However, because of the morphological similarity between the hybrids and their parental species, the use of nuclear DNA markers unique to parental species are required for positive identification in order for a distribution map to be produced.

Research Response: Principal Investigator, Dr. Donald Strong.University of California, Davis.
UC Davis researchers will continue to provide DNA analysis for ISP as needed and do a comprehensive survey of potential hybrids in San Pablo Bay. Hybrids with the ecological traits of the invader are a major ecological problem. Preliminary greenhouse experiments have shown a strong positive correlation between the fraction of invader DNA and plant biomass and height. Advanced generation hybrids

Figure 1.


San Pablo Bay
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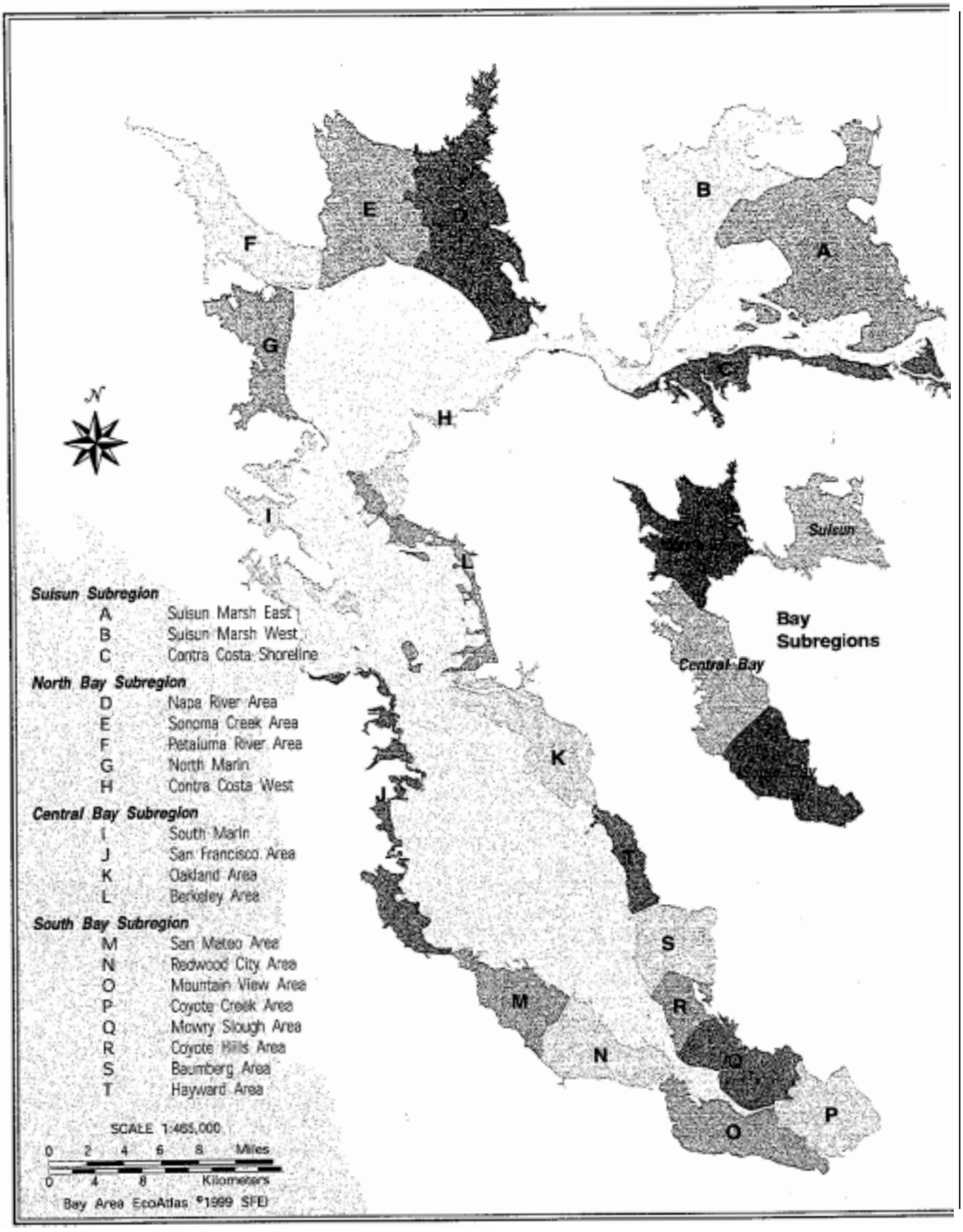
Potential Spread of Introduced *Spartina* Spp
Existing Colonies: Proposed for Phase 1 Control
Existing Colonies: Proposed for Phase 2 and 3 Control
California
SCALE 1:465,000
0 2 4 6 8 Miles
0 4 8 Kilometers
Bay Area EcoAtlas ©1999 SFEI

Figure 4.


Suisun Subregion
A Suisun Marsh East
B Suisun Marsh West
C Contra Costa Shoreline
North Bay Subregion
D Napa River Area
E Sonoma Creek Area
F Petaluma River Area
G North Marin
H Contra Costa West
Central Bay Subregion
I South Marin
J San Francisco Area
K Oakland Area
L Berkeley Area
South Bay Subregion
M San Mateo Area
N Redwood City Area
O Mountain View Area
P Coyote Creek Area
Q Mowry Slough Area
R Coyote Hills Area
S Baumberg Area
T Hayward Area
SCALE 1:465,000
0 2 4 6 8 Miles
0 4 8 Kilometers
Bay Area EcoAtlas ©1999 SFEI
Suisun
Bay
Subregions
Central Bay

connoting bidirectional introgressive hybridization, a paucity of individuals dominated by native DNA (less than 20%), and an abundance of individuals dominated by invader DNA (greater than 80%) were found at Coyote Slough and San Bruno. These patterns suggest I) an absence of reproductive barriers between species, *2)* pollen swamping of native plants by Spartina alterniflora, and **3)** natural selection favoring hybrid genotypes that have a high proportion of invader characters. The most chilliig specter is the possibility of higher fitness of the hybrids than of either parental species. The problem would be exacerbated if hybrids favored by natural selection have the aggressive growth characteristic of S. *alterniflora.* Absent control, native marshes would act as ovule receptors of invader pollen in the F1 generation, then bidirectional backcrossing would produce hybrid swarms that overwhelm each marsh in succession

Research methods: RAPD methodology and scoring-DNA is extracted from *Spurtinu* samples using modifications of the proteinase-K based method of Guidet (1994). Screening of 96, IO-mer primers yielded *7* primers (A2,A17,B7,C10.C12,D5,D11) that produced 10 apecies-specific bands; 5 bands were ubiquitous and restricted to **S.** alterniflora. (Ayres et al, 1999) Each accesssion is scored for the presence and absence of each species specific band. A phenotypuic index is generated based on the percentage of **S.** alterniflora diagnostic characters. By this method pure **S.** foliosa is scored as :0% **S.** alterniflora", pure **S.** alterniflora had 100% of the diagnostic characters, and 9 hybrid categories from 105to 90% can be distinguished, with the caveat that individuals termed pure could in fact be undetected hybrids. With increasing numbers of primers in our laboratory, the possibility is decreasing that the " pure" categories are actually undetected hybrids.

2. Concern: As ISP establishes priority sites for control, it must properly address the significant ecological concerns regarding habitats and species. Regional loss of unvegetated tidal flats will significantly impact migratory shorebird species foraging habitat. Some shorebird species rely on fairly specific areas within the bay. Identifying these species and the areas which they depend upon should be thoroughly considered in establishing priority sites.

Focused Research Response: Principal Investigator: Gary Page, Point Reyes Bird Observatory. Existing data is available on many species and their foraging patterns in San Francisco Bay. Coupled with a literature review on shorebird population decline in England following a *Spartina* invasion (Goss-Custard 1995) PRBO will produce a report on the potential threat to shorebirds in San Francisco Bay and recommend sites to aid in prioritizing control efforts. The report will also briefly explore connectivity, in relation to shorebird migration, of San Francisco Bay with other major Pacific coastal wetland areas being impacted by *Spartinu.*

3. Management Concern: Although a reasonably good level of control of invasive *Spurtinu* can be achieved with the use of glyphosate, it requires large volumes of fresh water and minimally retreating areas for two consecutive years. Access to remote sites at low tide is difficult and clean fresh water sources are unavailable. Alternate methods of control which may result in greater control efficacy and potentially reduce logistical constraints is prudent for the success of ISP.

Focused Research Response: Principal Investigator: Dr. Lars Anderson USDA-Agricultural Research Service, Exotic and Invasive Weed Research. The fate and efficacy of the herbicides Årsenal and Sonar for control□of *Spartinu alterniflora* will be determined in small scale field Osites in San Francisco Bay. Dissipation of the herbicides in the □sediments following applications will be characterized by using "peepers" to sample the pore-water in the upper hydrated zone (2 to 10 cm) of sediment. Sonar will be applied as a pelleted formulation; □arsenal will be applied to the foliage. This data will be useful for □both Federal EPA and CalEPA review if efficacy warrants an expansion □of current labeling. Plots will be replicated four times sampling will include pre- and post-treatment samples at bi-weekly intervals for

12 months, or until active ingredients are below detection limits. A Combination of HPLC and immunoassay procedures will be used to quantify the levels in the pore water and that bound to sediments. These studies will be conducted in parallel with studies on the effect of cutting and subsequent herbicide applications to optimize control.

C. Monitoring and Assessment Plans: San Francisco Estuary Institute

SFEI will build upon the existing CALFED *Spartina* control project and related work to manage data and information that needs to flow from the field to scientists and managers in the region. In addition to the existing CALFED contract for developing *Spurtina* monitoring protocols, SFEI has contracts with the USEPA to coordinate an estimation of expected *Spartina* impacts under a no-control scenario, and with the Fish and Wildlife Foundation to begin developing a website for sharing information about control efforts. All of these related efforts need to articulate with the recently established Regional Monitoring Program for Wetlands (WRMP), the technical and scientific aspects of which are coordinated through SFEI. The WRMP provides a multi-agency forum for coordination of government policies and programs for wetlands, a set of scientific Focus Teams that can provide review of monitoring plans from the context of regional expertise, and a Scientific Review Group that can provide ongoing independent review of the control program.

Task 1. Map of Ecological Risks and Priority Control Sites

SFEI will plan and hold **2-3** workshops for key managers and wetlands scientists to develop a matrix of expected ecological and geomorphic impacts posed by the invasion, the related management concerns, and practical criteria for priority site selection. A draft matrix will be developed based upon the *Spartina* Impacts white paper being produced through SFEI for USEPA. After the matrix is produced, SFEI will plan and hold 1-2 additional workshops to map the distribution of the expected impacts and to identify the priority control sites. SFEI will use the Bay Area EcoAtlas as the base map for these works. Workshop participants will code each parcel of tidal marsh and tidal flat according to the kinds and magnitudes of possible impact from Spartina invasion, local management concerns, and priority for control efforts. **An** ArcView GIS coverage will be produced based upon the results of this workshop.

Task 2. Photo Maps of Selected Control Sites

Four to six control sites will be selected for initial control efforts. For each of these sites, photo base maps will be produced for directing and tracking control efforts and results. Each map will be based upon new natural color aerial photography (scale 1:6,000). The photos will be scanned, geo-rectified, edge matched and mosaiced, color corrected, and processed as **Mr.** Sid images for use in a GIS, common desktop applications such as word processors and graphics software, and in the field as reference maps.

Task **3.** Training

We anticipate that the training to be provided through the existing project will need to be repeated each year for new control workers. Furthermore, **the** proposed research will yield important new indicators of field conditions that control workers must be trained to use. Training in data collection is an essential part of data QA/QC. Field workers will be trained in the use of GPS with data loggers, field measurements of plant structure and vertical distribution, and file formatting.

Task 4. Website Design and Development

SFEI is already working **on** website tools and applications that will benefit the proposed project. **SFEI** is working with the USGS to produce a regional photo map based upon Digital Orthoquads (scale 1:40,000). This image will serve as an online base map into which the maps of ecological risks, management concerns, distribution of invasions, and control sites can be placed. Polygons of invasion patches and

control patches that are generated through GPS will be accessed through the site maps. Change in patch shape and size through time will be displayed. Monitoring stations and data will be accessible through interactive station maps accessed through the site maps. All tabular data will also be accessible by text drive menus and queries. The client-side hardware will consist of standard PCs capable of running current versions of Internet Explorer or Netscape browser. As the project progresses, browser-based applications will be constructed to facilitate data entry, update, display and metadata documentation. These applications will be made available to Focus Team members and key SFEI staff during the data development process. The data-access system will be surrounded by an HTML-based user assistance and feedback system to facilitate its usage and interpretation. Complete datasets will also be made available to technical experts with specific file-format requirements (i.e, ASCII comma-delimited, ArcInfo Export format, ArcView Shapefile). These two methods of data-distribution (web application delivered and raw data format) will allow for open access to all data and will allow potential audiences to create secondary uses of the project data. (Evaluation should occur at project level and system level)

d. Data base Design and Development

The data storage and retrieval system will be based on a client-server architecture. The server-side hardware (SUN workgroup servers for data and applications, PC servers for map and web servers) and software will allow for spatial and non-spatial data to be served via application and manager server software (Oracle 8i, Access, ArcInfo, ArcSDE, ArcIMS). All data will be delivered to SFEI through GPS, data loggers, or spreadsheets for conversion to a standard digital format for inclusion in the Wetlands RMP relational database maintained in Oracle 8i at SFEI. The data authors will be required to follow QA/QC plans to assure that the raw data are error-free.

A key purpose of the database is to enable the public and resource managers to access qualified data in the timeframe of management decisions. The database and delivery system will have to be designed to minimize the risk of data delays or hurried deliveries that are not well matched to the appropriate timeframes for data summaries, public response, and informed management decisions.

Data security and integrity are basic concerns. Initial QA/QC by the data authors will help assure data integrity. SFEI maintains all necessary fire walls and other aspects of systems administration to prevent data corruption by intrusion. The contents of the wetlands RMP database at SFEI will be archived on tape off site in a fire *safe* facility each week.

5. Table 2. Expected Work Products/Outcomes

Year	Expected Product/Outcome	Starting Quarter	Ending Quarter	Milestone
1	Map of Ecological Risks/Priority sites (SFEI)	1	4	*
1	Photo Maps of Control Sites (SFEI)	1	4	
1	Website Design and Development (SFEI)	1	4	
1	NPDES Permit	1	3	*
1	Invasive *Spartina* Identification Manual	1	4	
1	Draft Control Manual (Techniques, Safety)	2	3	
2	Revised Control Manual	2	4	*
1, 2	Annual Status and Monitoring Report	3	4	
1	Develop Training Materials	2	4	
1, 2	Manager Science Forum 1x 2 yrs.	2	2	
1	Revised Management & Impl. Plan	1	4	*
2	Focused Research Reports , UCD,USDA,	1	4	
1	Focused Research Report PRBO	1	3	
1, 2	Post- Season Control Workshop	2	3	
1	Completion of the EIR/EIS	-	3	*
1,2	Quarterly Reports	1	4	
1,2	Public Outreach Workshops (5)	1	4	
1,2	Public Outreach Written Materials	1	4	

g. Feasibility

Control emphasizes proven, integrated methods, including aerial and ground application of registered herbicide for estuarine environments or permitted experimental application of appropriate new herbicides, mowing, burning, covering, pulling and digging. Only techniques that provide a net benefit will be considered. There is ample data from Washington State (WSDA 1999) and from recent small-scale tests on existing San Francisco populations, to indicate that control is attainable with optimization and integration of methods. A control efficacy study done at the Hayward Regional Shoreline, in 1999, examined seasonal timing and variation of rate of glyphosate application. Preliminary analysis of data showed that treatment in both August and September significantly reduced the percent cover by an average of 80% more than the control plots. (Zaremba, in prep.) This is consistent with control experiments performed in Washington State for invasive *Spartinu* control. The greatest opportunities for success occurs with populations under one acre, which would include outlier populations. Control of these populations are critical to blocking dispersal. Because in San Francisco Bay, the most heavily infested areas are still those where the original plantings took place or adjacent properites. control of the outlying populations would quickly, significantly reduce the overall distribution of invasive *Spartina* in the bay. That the current population occupies a very small percentage of the total available habitat that can be invaded strongly points to the feasibility of a full implementation mode of control. Infestations at Cultus Bay and Deer Lagoon, Washington, populations were reduced over two years from 40 solid acres to 12, and 60 acres to 14, respectively. (WSDA, 1999)

Efficacy of all control work will be monitored and quantified in coordination with ISP and monitoring protocol established this year by ISP. Local expertise has been developed among a few local with regard to *Spartinu* control. Efforts have been greatly facilitated by documented control efficacy experiments and a generous sharing of logistical field knowledge. Successful control methods used in Washington state for *Spurtinu* control will be evaluated for appropriateness in San Francisco Bay

Existing on-the-ground control actions in San Francisco Bay have laid the foundation for an expanded program because many practical constraints have already been identified. These include timing of flowering, timing of clapper rail nesting, physical access to populations and limitations on equipment. Coupled with proven control methods, control of invasive *Spartina* in San Francisco Bay is feasible.

D1. Applicability to CALFED ERP Goals and Implementation Plan

Table **3.**

ISP Objective	ERP Goal #	NIS Goal #	Calfed Identified Scientific Uncertainty Addressed
Undertake an expanded effort to plan and implement control of invasive *Spartina* to prevent an invasion of San Pablo and Suisun Bays and significantly reduce invasive *Spartina* populations bay wide	5	II, III	
Contribute. to the overall scientific understanding of how ecological engineers can physically alter the S.F. Bay ecosystem and specifically, how the process of introgression can potentially lead to extinction of native species.			**X**
Build a bay-wide infrastructure to detect, prevent, and control future invasive species in the intertidal zone.	5	I	

ERP Goal #5 : Non-native Invasive Species.
NIS Goal #I: Prevent new introductions. # II. Limit spread or eliminate populations through management. # III. Reduce harmful ecological, economic, social and public health impacts resulting from infestation of NIS through appropriate management.
Calfed Scientific Uncertainty Addressed : Non-Native Invasive Species (PSP pg 29) ISP, if funded, will help provide data, maps and information regarding: 1)To what extent can *Spurtina* be eradicated/controlled? **2)** To what extent will *Spartina* preclude achieve restoration objectives? 3) How to colonize native species post control? 4) Comprehensive surveys and mapping of *Spartina* populations ***5)*** Development of management and implementation plans and control programs.

2. Relationship to Other Ecosystem Restoration Projects

Draft Recoverv Plan for Tidal Marshes in Central and Northern California U.S. Fish and Wildlife Service, Sacramento, CA. Endangered Species Office. *(2000)*
Eradication of *Spurtina alterniflora* is assigned a rank of 1. This ranking is reserved for actions needed to prevent forseeable slide towards extinction. The principal reasons are to protect the physical integrity of channel habitat structure, preventing the listing of *Spurtina foliosa* which is threatened by ***S.*** *alterniflora* introgression, and as an ecosystem level concern, the regional loss of tidal flat habitat. Additionally, *S. ulternifloru* is identified as a threat to large scale habitat restoration and efforts to recover endangered species by reintroduction. (i.e. *Suaeda californica*).

Draft U.S. Shorebird Conservation Plan (2000) Manomet Research Center, MA
This conservation plan, analyses regional threats to shorebirds in the San Francisco Bay subregion. This plan recommends the elimination of introduced *Spartinu alterniflora* as a priority conservation action.

Restoring the Estuary: An Implementation Strategy for the San Francisco Bay Joint Venture. Final Draft. (1999) The Strategy establishes region-wide habitat goals and sub-regional acreage objectives to protect, restore and enhance Bay, seasonal wetland and creek and lake habitats. Support for *Spurtinu alterniflora* control is a high activity level, regional, project of the San Francisco Bay Joint Venture.

San Francisco Bavlands Ecosystem Habitat Goals Proiect 1999. Presents a scientifically based set of recommendations for the kinds, amounts, and distribution of wetlands and related habitats that are needed to sustain diverse and healthy communities of fish and wildlife. Habitat Goals strongly recommends that *Spurtinu alternifloru* be controlled or eradicated.

Introduced Tidal Marsh Plants in the San Francisco Bav Estuary: Regional Distribution and Priorities for Control. **SFEI** 1998. Grossinger et al. Control or eradication of invasive *Spurtinu* is recommended as a top priority.

3. Request for Next-Phase Funding:
This proposal is a next phase of a previously funded project. **In** 1999, Calfed directed funds toward the establishment of the Introduced *Spurtina* Eradication Project (ISEP). This proposal details tasks and costs to directly expand ISEP. (Please note that ISEP has changed it name to ISP). ISP will remain at the demonstration project level. For the current status of ISEP please see Appendix A.

4. Previous Recipients of CALFBD Funding :
Project Number #11332-0-J001 Title: Introduced *Spartinu* Eradication Project

6. System-Wide Ecosystem Benefits:

See Project Description.

7. Qualifications

Nadine Hitchcock will oversee the administration of the grant for the applicant agency and for the subcontractors. She is an environmental planner with more than 15 years experience as a project manager with the Coastal Conservancy. She is currently the manager of the San Francisco Bay Area Conservancy Program. She has managed several large-scale wetlands restoration projects involving multiple agencies and nonprofit organizations. She is currently project manager for, the Lower Napa Rive Enhancement and Public Access plan, and the Napa River Flood Protection and Wetland Enhancement Plan.

Maxene Spellman: is ISEP's current project manager and will continue to administer grants for the Coastal Conservancy. She is an environmental planner with a Masters in Planning and has worked for the Conservancy for six years. She has worked on a variety of projects, including the Lake Merritt Marsh Restoration, which involve close coordination with public agencies, nonprofit organization and citizen's group.

Debra Smith: Is the current Project Coordinator for the Introduced *Spartina* Eradication Project. Since the inception of ISEP Ms. Smith has built support among bay area wetland managers and regulatory agents, overseen the completion of the Environmental Compliance and Permit Requirements Report, successfully secured additional funding from the US Fish and Wildlife Foundation, hired staff, and presented at numerous meetings. Before coming to ISEP, Ms. Smith was the Introduced *Spartina* Project Coordinator for the East Bay Regional Park District. She contributes more than four years of experience specific to invasive *Spurtinu* , including logistical planning and control techniques. Ms Smith is currently the technical coordinator for the Bay Point Regional Shoreline Restoration Project.

Shannon Klohr: is ISEP's current field coordinator and has brought a wide range of field expertise to the project, including vegetation mapping and botany. Her field work includes experience as Lead Ecologist for the Nature Conservancy's Yosemite National Park Vegetation Mapping Project, and as Crew Leader for the Point Reyes National Seashore Vegetation Mapping Project. Ms. Klohr qualifications include experience as park ranger and field biologist at Golden Gate National Recreation Area and Pt. Reyes National Seashore. She contributes important local knowledge to the project.

Lars W. J. Anderson, Ph.D. is a plant physiologist and currently the lead scientist for the Exotic and Invasive Research Unit of the USDA-ARS Aquatic Weed Research Laboratory. His research and publications pertain to the biology, ecology and management of weeds, with particular focus on reproduction and invasiveness of exotic species in a manner that will reduce the use, dependence and risk of herbicides. The laboratory serves as the primary extension contact point for the State of California and other western states and provides expertise in aquatic plant identification, management and eradication.

Donald Strong, Ph.D is a population biologist and professor of Evolution and Ecology at the University of California, Davis. He is the author of over 100 scientific publications, including several on the control and hybridization between exotic and native *Spartinu*. His current research efforts pertain to biological control of *spartina alterniflora* in Willapa Bay, Washington, and eradication of alien cordgrasses in California waters.

Debra Ayres, Ph.D, is an ecologist and post-doctoral fellow with Dr. Don Strong. She has published several papers regarding the hybridization of Spartina and oversees the nuclear DNA analysis in the *Spartina* lab. Dr. Ayres focuses on combining molecular biology with field and greenhouse observations to understand the hybridization phenomena occurring between the native and introduced cordgrass in the San Francisco Bay marshes.

Gary Page, M.S. Zoology, is the director of the Point Reyes Bird Observatory, an independent non-profit membership organization dedicated to conservation of through. Mr. Page is recognized as one of the world's experts on shorebird biology and is particularly knowledgeable about habitat issues facing shorebird species in the western United States. *Gary* led an intensive, broad scale investigation of shorebird species' distribution, habitat use and population estimates along the Pacific Flyway migratory route and has authored several focused papers on the project's results. He now acts as the Southern Pacific Regional Chair of the United States Shorebird Conservation Plan; his responsibilities have been to lead the prioritization of future shorebird research and conservation efforts for most of California.

Jules Evens: Wildlife Biologist, Avocet Research Associates. Jules Evens possesses a wide range of expertise in endangered species consulting and surveying. He is one of California's most experienced California clapper rail and black rail biologists, with over 20 years of research in Northern California. Widely published in peer review journals he has contributed extensively to EIWEIS documents, endangered species petitions, monitoring reports, environmental assessments and management plans. Jules Evans is affiliated with the Point Reyes Bird Observatory and Audubon Canyon Ranch and is Consulting Biologist for the Marin Municipal Water District.

Richard Grassetti: He is principal at Grassetti Environmental Consulting a specialty environmental planning firm with expertise in environmental assessment, CEQA/NEPA project management, and preparation of geologic and resource studies. Mr. Grassetti has consulted and advised the Conservancy regarding ISEP environmental compliance and permitting requirements and the Conservancy is anticipating retaining his services to assist and advise as the conservancy contracts for a programmatic joint EIR/EIS.

F. Cost

Rationale for Service contracts:

Management: The California Coastal Conservancy is contracting four (4) consultants to provide the services required to implement this proposal. The Conservancy is not able to create staff positions to meet the needs of the project.

Environmental Compliance: The California Coastal Conservancy will be the lead agency for CEQA, the contractor for the preparation of a joint EIWEIS, and the applicant for an NPDES permit. It is anticipated that the Conservancy will ask Grassetti Environmental Consulting to provide review and advice during the preparation of these documents to ensure completeness and efficient production.

Wildlife Biologist: Work for this project will be carried out in sensitive habitat. A number of endangered species will potentially both benefit and be impacted by this project. To ensure compliance with all guidelines established regarding endangered species Jules Evans has been identified as the most qualified wildlife biologist to assess habitats and conduct endangered species surveys.

Toxicologist: ISP anticipates public concern regarding the use of herbicides as a technique to control invasive *Spartina*. which can be addressed by public involvement and education. Funding is requested for

the services of a toxicologist to present at public meetings, an informed but easily understook framework in which to fit the use of glyphosate. This consultant will also assist with both verbal and written response to concerns of herbicide use.

Graphics / Outreach Products: Money is being requested for services relating to numerous public education products including graphics required for public presentations.
Service Contracts for focused research will be in the form of grants and interagency agreements. Focused research projects have been identified as "gaps in knowledge" that need to be addressed in order for the project to successfully meet its objectives.

Misc. Cost/Budget Information

This proposal, except for administration utilizes a contractor/subcontractor relationship. Environmental services contracts, interagency agreements and requests for proposals will adhere to all state guidelines regarding contracting.
Benefits for administrative costs are calculated at **29%** of salary as provided by standard California State benefit packages.
Travel includes bay wide mileage reimbursement for field work. Travel includes mileage reimbursement for travel to a maximum of two in-state topically related conferences for both project and field coordinators.
Supplies are general office and fieldwork supplies and field equipment under $1,000 per unit.

Local Involvement

Table **4** lists partnerships, collaborators and supporters (See Cost-sharing). 238 city and county notification letters were delivered as required by this proposal. (See Attachment I). A comprehensive Public Involvement Approach and Plan is currently in preparation. (Deliverable for the 1999 ISEP program). To date no direct opposition has been expressed or identified. Temporary third party impacts may involve trail closures or restricted public access during control operations. These closures are generally limited to a period less than twenty four hours.

Compliance with Standard Terms and Conditions

The California Coastal Conservancy as applicant will comply with the state and federal standard terms and conditions. It should be noted that the University of California, Davis is listed as a subcontractor in this proposal. The University of California does not agree to comply with the Standard Terms and Conditions and may wish to enter into negotiations with the Calfed program.

INVASIVE SPARTINA PROJECT
DETAILED BUDGET YEAR 1

Year	C/A*	Task/Subtask	Direct Labor Hours	Direct Salary & Benefits	Service Contracts	Materials and Acquisition	Other Direct Costs	Overhead and Indirect Costs	Total Costs
1	SCC	1. Project Administration							
	SCC	Contract prep, processing and execution	1,650	63,873				15,250	79,123
	SCC	Legal review and advise on proj. contracts/issues	456	20,236					20,236
		Program Manager Oversight	96	3,963					3,963
		Total Cost							
		2. Project Management							
		1. General Project Coordination/Management							
		Rent/phones/utilities						20,800	20,800
		2 Computers w/monitors @ $3500				7,000			7,000
		1 Digital Camera				350			350
		1 Color Laser Jet Printer				1,100			1,100
		1 36" wide plotter				8,000			8,000
		Software Arview + Image Analysis				3,700			3,700
		Computer/printer supplies, paper, cd's etc...					2,700		2,700
		General office supplies/postage/shipping					3,200		3,200
		Mileage Reimbursement 750 mi/wk @.32					12,000		12,000
	PC	Establish regional coordination/support			6,920				6,920
	PC	Evaluation and refocusing of project goals/obj.			1,720				1,720
	PC	Identify and secure future funding			3,300				3,300
	PC	RFP development, distr., interviews, hiring			4,320				4,320
	PC	Meetings and coordination w/partners			1,760				1,760
	PC	Coordination of Monitoring Team			5,650				5,650
	PC	Response to Citizen Input			2,700				2,700
	PC	Project presentations and prep.			1,970				1,970
	PC	Travel/attend conferences,mtgs and workshops			3,520				3,520
	PC	Inspection of work in progress			7,560				7,560
	PC	Validation of costs/budget tasks			2640				2640
	PC	Oversight of Service Contracts			25,700				25,700
	PC	Convene and meet w/advisory panels			880				880
	PC	Assist with contract development			2,900				2,900
	PC	Prepare and hold weekly staff meetings			7,920				7,920
	PC	Assist with field work/control			3,400				3,400
1,2	PC	Org. and facilitate 2 Science/Manager Forums*			1,650				1,650
	PC	Annual ISEP Status Report*			3400				3400
	PC	Develop training materials *			6400				6400
		Slides/video tape/overheads/printing					140		140
	PC	ISP Manag. and Implementation Rprt*			6600				6600
		Printing 100(40pgsX.05 + 5 X 1.00 color xerox)					700		700
	PC	Process and Application of NPDES permit*			4200				4200
		Permit fee					10,000		10000
	PC	Prepare Quarterly Reports*			720				720
	PC	Oversight & Assistance w/ EIR/EIS completion			8,500				8500

INVASIVE SPARTINA PROJECT
DETAILED BUDGET YEAR 1

Year	C/A*	Task/Subtask	Direct Labor Hours	Direct Salary & Benefits	Service Contracts	Materials and Acquisition	Other Direct Costs	Overhead and Indirect Costs	Total Costs
		Field Coordinator 1 (East Bay)							
	FC	Assist w/mapping efforts			2700				2700
	FC	Equip. Spec./Identify operation needs			820				820
	FC	Obtain permission for access from landowners			4000				4000
	FC	Identify, notify, assist land owners			6500				6500
	FC	Field Monitoring/Data Collection			5680				5680
	FC	Reporting/database maintenance			1600				1600
	FC	Travel/attend meetings/wkshps/conferences			410				410
	FC	Assistance with Report Production			2175				2175
	FC	Development/Revisions of Data Sheets			275				275
	FC	Assist with trainings			800				800
	FC	Assist landowners with control operations			6000				6000
	FC	Participate in North Bay Prevention Survey			4150				4150
	FC	Miscellaneous Research Tasks			700				700
	FC	Coordinate and lead volunteers			2575				2575
		Prod. a ID Brochure for invasive wetland species*			2000				2000
		100 X $1.00(5)(color xerox)					500		500
	FC	Prod. a Spartina Control Manual for Landowners*			5500				5500
		100 (.05 X 30 +5(1.00) copy + color xerox					650		650
	FC	Org. and facilitate post control season workshop*			2200				2200
	FC	Org. Training Wkshps/mud rescue, airboat safty			2200				2200
		Field Coordinator 2 (West Bay)							
	FC	Assist w/mapping efforts			2700				2700
	FC	Equip. Spec./Identify operation needs			820				820
	FC	Obtain permission for access from landowners			4000				4000
	FC	Identify, notify, assist land owners			6500				6500
	FC	Field Monitoring/Data Collection			5680				5680
	FC	Reporting/database maintenance			1600				1600
	FC	Travel/attend meetings/wkshps/conferences			410				410
	FC	Assistance with Report Production			2175				2175
	FC	Development/Revisions of Data Sheets			275				275
	FC	Assist with trainings			800				800
	FC	Assist landowners with control operations			6000				6000
	FC	Participate in North Bay Prevention Survey			4150				4150
	FC	Miscellaneous Research Tasks			700				700
	FC	Coordinate and lead volunteers			2575				2575
		Prod. a ID Brochure for invasive wetland species*			2000				2000
		100 X $1.00(5)(color xerox)					500		500
	FC	Prod. a Spartina Control Manual for Landowners*			5500				5500
		100 (.05 X 30 +5(1.00) copy + color xerox					650		650
	FC	Org. and facilitate post control season workshop*			2200				2200
	FC	Org. Training Wkshps/mud rescue, airboat safty			2200				2200

INVASIVE SPARTINA PROJECT
DETAILED BUDGET **YEAR 1**

		3. Operations/Control							
	SC	Control of North Bay Populations (1999 funds)			0				
	SC	Control of Prioritized Outlying Populations			0				
	SC	Control at 4 Large-Scale Demonstration Sites			0	60,000			60,000
		Helicopter rental 150 acres X $150/acre				22,500			22,500
		Herbicide 150 acres @ $100/gal (aerial)				15,000			15,000
		1 truck with spray rig			0	35,000			35,000
		Misc. hose, mowers,and small equipment				5000			5000
		Equipment maintenance				12,000			12,000
		4. Mapping/Monitoring/Assessment							
		SFEI (See attached Detailed Budget)							
		Total Cost			195,287.50	54,000			249,288
		5. Focused Research							
	UCD	UC Davis Genetic Sampling and Survey			105,570				105,570
		Supplies $5700							
		Other Costs $ 300							
		Travel $2000							
		Fee Remission $9000							
		Full-time Researcher $40,824							
		2 half-time 2x$19,565=39,130							
		Overhead(26%) $10,616							
	USDA	USDA Control Experiments			110,555				110,555
		Salary/ Researcher $35,000							
		Columns $2500							
		Supplies $8000							
		Fast Test $10,000							
		Travel $1000							
		Indirect costs 10% $11,055							
	DFG								
	PRBO	Point Reyes Bird Obs. Threat analysis/priorities*			19,500				19,500
		Total Cost							
		Additional Service Contracts							
		Advise and Assist with Environmental Compliance			9,000				9,000
		Produce Graphics for Public Outreach/Reports			7,500				7,500
		GIS start-up support			6,000				6,000
		Toxicologist			4,000				4,000
		Wildlife Biologist			12,000				12,000
		Total For Year	2,202	88,072	684,313	223,650	31,040	36,050	1,063,125

INVASIVE SPARTINA PROJECT
DETAILED BUDGET YEAR 2

Year	C/A*	Task/Subtask	Direct Labor Hours	Direct Salary & Benefits	Service Contracts	Materials and Acquisition	Other Direct Costs	Overhead and Indirect Costs	Total Costs
1	SCC	1. Project Administration							
	SCC	Contract prep, processing and execution	1,650	63,873				15,250	79,123
	SCC	Legal review and advise on proj. contracts/issues	456	20,236					20,236
	SCC	Program Manager Oversight	96	3,963					3963
		Subtotal	2,202	88,072	0	0	0	15,250	103,322
		2. Project Management							
	PC	1. General Project Coordination/Management							
		Rent/phones/utilities						20,800	20,800
		Computer/printer supplies, paper, cd's etc...					2,700		2,700
		General office supplies/postage/shipping					3,200		3,200
		Mileage Reimbursement 750 mi/wk @.32					12,000		12,000
	PC	Establish regional coordination/support			6,920				6920
	PC	Evaluation and refocusing of project goals/obj.			1,720				1,720
	PC	Identify and secure future funding			3,300				3,300
	PC	RFP development, distr., interviews, hiring			4,320				4,320
	PC	Meetings and coordination w/partners			1,760				1,760
	PC	Coordination of Monitoring Team			5,650				5,650
	PC	Response to Citizen Input			2,700				2,700
	PC	Project presentations and prep.			1,970				1,970
	PC	Travel/attend conferences,mtgs and workshops			3,520				3,520
	PC	Inspection of work in progress			7,560				7,560
	PC	Validation of costs/budget tasks			2640				2640
	PC	Oversight of Service Contracts			25,700				25,700
	PC	Convene and meet w/advisory panels			880				880
	PC	Assist with contract development			2,900				2,900
	PC	Prepare and hold weekly staff meetings			7,920				7,920
	PC	Assist with field work/control			3,400				3,400
	PC	Org. and facilitate 1 Science/Manager Forums*			1,650				1,650
	PC	Annual ISEP Status Report*			3400				3400
	PC	Revise training materials *			3000				3000
		Slides/video tape/overheads/printing					140		140
	PC	Ammendments ISP Manag. and Implementation Rprt*			3000				3000
		Printing 100(40pgsX.05 + 5 X 1.00 color xerox)					700		700
	PC	Prepare Quarterly Reports*			720				720
		Subtotal			94,630	0	18,740	20,800	134,170

INVASIVE SPARTINA PROJECT
DETAILED BUDGET YEAR 2

Year	C/A*	Task/Subtask	Direct Labor Hours	Direct Salary & Benefits	Service Contracts	Materials and Acquisition	Other Direct Costs	Overhead and Indirect Costs	Total Costs
		Field Coordinator 1 (East Bay)							
	FC	Assist w/mapping efforts			2700				2700
	FC	Equip. Spec./identify operation needs			820				820
	FC	Obtain permission for access from landowners			4000				4000
	FC	Identify, notify, assist land owners			6500				6500
	FC	Field Monitoring/Data Collection			5680				5680
	FC	Reporting/database maintenance			1900				1600
	FC	Travel/attend meetings/wkshps/conferences			530				410
	FC	Assistance with Report Production			2175				2175
	FC	Development/Revisions of Data Sheets			425				275
	FC	Assist with trainings			900				800
	FC	Assist landowners with control operations			8000				6000
	FC	Participate in North Bay Prevention Survey			4150				4150
	FC	Miscellaneous Research Tasks			700				700
	FC	Coordinate and lead volunteers			2575				2575
		100 X $1.00(5)(color xerox)					500		500
	FC	Finalize Spartina Control Manual for Landowners*			4500				4500
		100 (.05 X 30 +5(1.00) copy + color xerox					650		650
	FC	Org. and facilitate post control season workshop*			2300				2200
	FC	Org. Training Wkshps/mud rescue, airboat safty			2200				2200
		Subtotal	0	0	50055	0	1150	0	48435
		Field Coordinator 2 (West Bay)							
	FC	Assist w/mapping efforts			2700				2700
	FC	Equip. Spec./identify operation needs			820				820
	FC	Obtain permission for access from landowners			4000				4000
	FC	Identify, notify, assist land owners			6500				6500
	FC	Field Monitoring/Data Collection			5680				5680
	FC	Reporting/database maintenance			1600				1600
	FC	Travel/attend meetings/wkshps/conferences			410				410
	FC	Assistance with Report Production			2175				2175
	FC	Development/Revisions of Data Sheets			275				275
	FC	Assist with trainings			2000				2000
	FC	Assist landowners with control operations			6000				6000
	FC	Participate in North Bay Prevention Survey			4150				4150
	FC	Miscellaneous Research Tasks			700				700
	FC	Coordinate and lead volunteers			5575				5575
		Prod. a ID Brochure for invasive wetland species*			2000				2000
		100 X $1.00(5)(color xerox)					500		500
	FC	Org. and facilitate post control season workshop*			2200				2200
	FC	Org. Training Wkshps/mud rescue, airboat safty			4120				4120
		Subtotal			50905	0	500	0	51405
		Public Outreach Coordinator			50050				50050
		Public Education Brochures, Pamphlet, Mailings					27,000		
		Subtotal			50050		27000		77050

		3. Operations/Control							
		Control of North Bay Populations			30000				30000
		Control of Prioritized Outlying Populations			40,000				40000
		Control at 4 Large-Scale Demonstration Sites				80,000			80000
		Helicopter rental 300 acres X $150/acre				45,000			45000
	SC	Herbicide 300 acres @ $100/gal (aerial)				30,000			30000
	SC	Misc. hose, mowers,and small equipment				5000			5000
	SC	Equipment maintenance				12,000			12000
		Argo Barge				35,000			35000
		Subtotal			70000	207000	0	0	277000
		4. Mapping/Monitoring/Assessment							35000
									519000
		SFEI (See attached Detailed Budget)							0
		Subtotal			80,659.30		1,100		81,759.30
									0
		5. Focused Research							0
		UC Davis Genetic Sampling and Survey			105,570	0	0		105,570
		Supplies $5700							0
		Other Costs $ 300						0	0
		Travel $2000							0
	UCD	Fee Remission $9000							0
		Full-time Researcher $40,824							0
		2 half-time 2x$19,565=39,130							0
		Overhead(26%) $10,616							0
									0
		USDA Control Experiments			110,555				110,555
		Salary/ Researcher $35,000							0
		Columns $2500							0
		Supplies $8000							0
	USDA	Fast Test $10,000							0
		Travel $1000							0
		Indirect costs 10% $11,055							0
									0
									0
		Additional Service Contracts							0
		Advise and Assist with Environmental Compliance			9,000				9,000
		Produce Graphics for Public Outreach/Reports			7,500				7,500
		GIS support			6,000				6,000
		Toxicologist			4,000				4,000
		Wildlife Biologist			12,000				12,000
		Subtotal			254,625	0	0	0	254,625
		Total	2,202	88,072	650,924	207,000	48,490	36,050	1,030,536

Invasive Spartina Project
Cost Sharing Table

Table 4 Invasive Spartina Project Cost Sharing

New	Agency/Institute/Group	Partnership	Collaborator	Supporter	Matching Dollars	Contributed Goods and Services	Total
	U.S. Fish and Wildlife Service/ SF Bay Prog.	X			20,000		20,000
	Don Edward SF Bay Nat'l Wldlf Refuge		X			70,400	70,400
	U.S. Department of Agriculture	X				40000	40,000
*	U.S. Environmental Protection Agency		X				0
*	National Fish and Wildlife Foundation		X				0
*	National Oceanic and Atmospheric Admin.		X				0
*	National Park Service		X			4500	4,500
	Don Edward SF Bay Nat'l Wldlf Refuge		X				0
	California Dept. Fish and Game	X			50,000		50,000
	University of California, Davis	X				15,000	15,000
	California Dept. of Parks and Recreation		X				0
*	California Dept. of Food and Agriculture		X				0
	San Francisco Reg. Water Qual. Control Brd.		X				0
	California Coastal Conservancy	X			200000	5000	205,000
*	Department of Boating and Waterways		X				0
*	Wildlife Conservation Board**			X			0
	San Francisco Estuary Institute	X				40000	40,000
*	Point Reyes Bird Observatory**	X					0
*	Center for Habitat Rest./City College of SF					1440	1,440
*	San Francisco Estuary Project		X				0
*	Coastal Reg.Mosquito & Vector Contr. Dist.**		X				0
*	SF Bay Bird Observatory**		X				0
*	Marin Weed Management District		X				0
*	California Exotic Pest Plant Council		X				0
*	Natural Resource Conservation Service**			X			0
*	Friends of Corte Madera Creek		X				0
*	Bay Area Open Space Council**			X			0
*	Hayward Area Recreation Department		X				0
	East Bay Regional Park District		X			70,000	70,000
	Bay Conservation and Development Comm.**			X			0
*	Bay Planning Coalition**			X			0
*	Marin County Dept. Parks/Open Space		X				0
	Alameda County Public Works		X			5000	5,000
	Alameda County Dept. of Agriculture		X			60000	60,000
*	Port of San Francisco		X				0
*	Port of Oakland		X				0
*	PG &E**			X			0
	Palo Alto Baylands/City of Palo Alto		X			1500	1,500
	City of Mountain View		X				0
*	California Native Plant Society		X				0
*	Bay Area Audoban Council**			X			0
*	Citizens Committee to Complete the Refuge**			X			0

invasive Spartina Project
Cost Sharing Table

New	Agency/Institute/Group	Partnership	Collaborator	Supporter	Cost Sharing Dollars	Contributed Goods and Services	Total
*	Save San Francisco Bay**			X			
*	Sierra Club**			X			
*	The Bay Institute**			X			
*	The Conservation Fund**			X			
*	Urban Creeks Council**			X			
	Total Dollars/year						582,840

* New since 1999 Calfea Funding
** As a member of San Francisco Bay Joint Venture
# Funds already allocated
Volunteer labor estimated at $10/hr.

Definitions:
/agencies that contributed to funding in 1999.

Collaborators: An agency/institute/group/or private landowner that is directly using or contributing to the resouces made available by the . Nonnative Invasive Spartina Project. Collaborators may or may not receive direct funding from NISP. All collaborators contribute to the information exchange necessary for the success of NISP.

Supporter: An agency/institute/group/private landowner that has specifically expressed support of this project direc
/directly or by means of membership in a joint venture.

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Attachment **A**

List of Appendices and Attachments

Appendices:

Appendix **A** : Current Status of ISEP

Attachments:

Attachment A : List of Appendices and Attachments
Attachment B : Letters of Support
Attachment C Environmental Compliance Checklist
Attachment D Land Use Checklist
Attachment E City and City Clerk Notification Letter
Attachment F: County Notification Letter
Attachment G Copies of the Letter Sent to BCDC
Attachment H Copies of the Letter Sent to DPC
Attachment I : List of recipients of the local notification letter
Attachment J: State agency required forms : Interagency Agreement
Attachment K Federal Form: Standard 424
Attachment L Calfed E-mail response regarding public access notification.

Appendix A
Current Status of the Introduced *Spartina* Eradication Project

ISEP 1999 Project Overview: The primary objective of ISEP is to initiate the strategic first steps to establish the management structure and develop an implementation plan for a successful regionally coordinated control program for invasive *Spartina* in San Francisco Bay. ISEF' includes beginning control of prioritized, targeted populations of invasive *Spartina*, the development of a public education and outreach strategy, a mapping/monitoring and assessment plan (SFEI) and two focused research projects (UCD,USDA). The geographic scope of the project, its scientific merit, including hypothesis, conceptual model and adaptive management framework arethe same as discussed in the attached proposal. ISEF' is committed to laying the strategic foundation for this major undertaking as responsibly but expiditously as possible in response to the rapid spread of the invasive *Spurtina* population.

Major Milestones/Accomplishments to Date* (May 15,2000)

- The Coastal Conservancy has completed contracts for each of the participants of ISEP. Participants, including the USDA, UC Davis, and SFEI, are finalizing their work programs. Contracts are expected to be fully executed by June 1,2000.

- The San Francisco Bay Joint Venture has identified "Support for invasive *Spartina* Control" as one of their regional, high activity level projects. SF Bay Joint Venture is a partnership of 23 public agencies, environmental organizations, the business community, local government and landowners working cooperatively to protect, restore, increase and enhance wetlands and riparian habitat in the San Francisco Bay watershed.

- Shannon Klohr was hired **as** ISEP's field coordinator. She has extensive field experience and expertise in vegetation mapping and botany. She was lead ecologist for the Nature Conservancy's Yosemite National Park Vegetation Mapping Project and has spearheaded invasive species control projects for the Point Reyes National Seashore and the Golden Gate National Recreation Area. Her experience with the public as a park ranger and naturalist at GGNRA is a significant asset to ISEP. She contributes her wealth of local expertise and personal contacts to the project daily.

- Completion of the Environmental Compliance and Permit Report. This report provides a comprehensive treatment of all environmental compliance requirements and permits that will be required for ISEP. It includes timelines, approximate costs and specific regulatory agency contacts. A copy of the report has been submitted to Kim Webb, ISP's contracting agent for USFWS.

- The Coastal Conservancy established that a programmatic EIR/EIS for *Spartina* control **work** is appropriate. The document will provide comprehensive coverage of all foreseeable issues which will generate concern, particularly endangered species, their habitats and water quality. The EIWEIS will serve as compliance for all near future *Spartina* control work bay wide. Any additional research or concerns can then be ammendments to the document. ISEP will also prepare and apply for a National Pollution Discharge Elimination Systems Permit (NPDES) from the regional water quality control board.

- **A** copy of the Draft Environmental Services Request (ESR) for the EIWEIS contract has been completed. The ESR was expedited to allow a full year for completion of the EIWEIS before the 2001 *Spurtina* control season. A final ESR will be distributed by June 1, 2000.

- ISEP presented overviews of the *Spurtinu* "situation" at the Bay Area Wetland Planners (BAWPG). ISEP focused attention on the negative ecological impacts associated with continued rapid spread of invasive *Spurtinu* and the urgency of the situation with regard to future restoration activities. ISEP's overall approach, primary objectives and future funding needs were discussed. The importance of regional coordination was emphasized and support by stakeholders was expressed.). BAWPG is a group of regional resource and regulatory agencies established to provide policy _____

- Accomplishments with regard to control of targeted populations in the North Bay: Extensive east Marin contacts havebeen established to assess 1) the local level of support 2) identify landowners 3) develop a strategy of control and 4) assess logistical planning needs to initiate control of *Spartinu densiflora* in the Corte Madera Creek Area. Enthusaistic support for the project has been experessed at the county level and citizens level (Friends of Corte Madera Creek Watershed). The general response to ISEP inquiry about *Spurtinu densiflora* was that the level of awareness of the problem was moderately high, there was a desire to remove the vegetation but no resources have been available for the project. Regarding *Spurtinu* populations at Benecia State Recreation Area, and at Point Pinole Regional Shoreline, managers are supportive and willing. (See support letter from CDPR ane EBRPD.)

New Temporary Project Constraints:

The Board of the Coastal Conservancy, as a condition of dispersing funding for control operations, that full CEQA/NEPA compliance is met. As stated above a full scoping of the Environmental Compliance Requirements and permits has since been complete and a joint EIWEIS document will be contracted. Because control measures, will in large part, be executed in areas of sensitive habitat, few if any sites can be considered categorically exempt. The production of an EIWEIS will therefore preclude the Conservancy from dispersing funding for control until completion of the EIWEIS. The maximum cost of the EIWEIS *is* expected *to* be $200,000. The Conservancy has offered to request additional funds from their board. In response to a request to contribute funds for the development of the EIWEIS, the USFWS has offered $20,000. ISEP will submit a request for a budget change to Calfed to secure additional funds for this purpose. Regional agencies are also being asked to contribute to this need.

No additional constraints or outstanding implementation issues have been identified.

** The Contract for ISEP was executed on March 8, 2000.

COUNTY OF ALAMEDA
PUBLIC WORKS AGENCY
MAINTENANCE *AND* OPERATIONS **DEPARTMENT**
951 Turner Court, Hayward, CA 94545-2698
(510) 670-5500 -Facsimile No. (510)670-5251

May 3,2000

Nadine Hitchcock
Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, California 94612

Dear Ms. Hitchcock:

I am writing to support efforts by you and the Coastal Conservancy for any work toward the organization and funding of a San Francisco Bay Estuary-wide Integrated Pest Management program *to* eradicate or control exotic cordgrass species (Spartina *spp.*).

For the past six years the Alameda County Public Works Agency has worked with the Don Edwards San Francisco Bay National Wildlife Refuge and the East Bay Regional Park District to research and demonstrate safe and effective eradication and control measures. Yet because of the large geographical and political areas involved. no one agency can effectively manage the whole project at this time. Representatives of these Agencies including myself, now realize that we need an umbrella Agency to coordinate a region wide Spartina Management Program. Your help to facilitate and integrate the involvement of other marshland owners and management agencies can lead to a more effective eradication program.

The Alameda County Public Works Agency supports a regional eradication program for exotic cordgrass. If you have any questions, please contact me at 925.803.7011

Sincerely.

Stephen R. Jones
Weed and Pest Control Supervisor

Santa Clara Valley Water District

5750 ALMADEN EXPRESSWAY
SAN JOSE, CA 95118-3686
TELEPHONE (408) 265-2600
FACSIMILE (408) 266-0271
www.scvwd.dst.ca.us

AN EQUAL OPPORTUNITY EMPLOYER

May 3,2000

Ms. Nadine Hitchcock
Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612

Dear Ms. Hitchcock:

Subject: Introduced Spartina Eradication Project—CalFed Grant Proposal

I am writing on behalf of the Santa Clara Valley Water District (District) to express support of the Coastal Conservancy's CalFed grant proposal to obtain funding for the Introduced Spartina Eradication Project.

The District provides wholesale water supply and flood management to Santa Clara County. The District, by policy, also supports the protection, enhancement or restoration of healthy creek and bay ecosystems. District jurisdiction includes the creeks and rivers of the county and the tidelands of San Francisco Bay. Included within our jurisdiction are sixteen tidally influenced creeks and channels.

We recognize that the invasion of exotic smooth cordgrass *(Spartina alterniflora)* can degrade the tidelands of San Francisco Bay. This poses an imminent threat to the existing tidal ecosystem and future tidal wetland restoration efforts. Also, by increasing the relative proportion of vegetated marsh to mud flat and open channel, tidal hydrology can be affected. This can potentially impact flooding characteristics in the area

Numerous, large infestations of smooth cordgrass are located just north of Santa Clara County. Without Bay-wide control efforts, we are concerned that this invasion will significantly expand to other parts of the Bay, including our area. A regional and coordinated approach is required in order to address a problem that crosses numerous jurisdictional boundaries. We support the Conservancy's proposal to spearhead the effort to supply much needed information on the nature of the invasion, and to provide the Bay-wide leadership required to make control of this species a success.

You can contact me at (408) 265-2607, extension 2702, or Ms. Gale Rankin, extension 2729, if you have any questions regarding my comments.

Sincerely,

Jason Christie
Engineering Unit Manager
Environmental Resources Management Unit

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Don Edwards San Francisco Bay National Wildlife Refuge
P.O. Box 524
Newark, California 94560-0524
(510)792-0222

May 4,2000

Nadine Hitchcock
Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, California 94612

Dear Ms. Hitchcock

We are writing to convey our support for continued funding of the Invasive Spartina Eradication Project (ISEP). administered by the California Coastal Conservancy. The San Francisco Bay National Wildlife Refuge Complex (Refuge) recognizes the important role of the ISEP in coordinating efforts to eliminate and prevent the further spread of exotic cordgrass species in the San Francisco Bay estuary.

The Refuge has been conducting control activities for exotic smooth cordgrass *(Spartinu alterniflora)* on Refuge property in south San Francisco Bay tidal marshes since 1994. Additionally, the Refuge has been cooperating with the County of Alameda-Public Works Agency, East Bay Regional Parks District, and California Department of Fish and Game to manage exotic cordgrass in the rest of the South Bay. Due to funding limitations, control efforts have been limited mainly to marshes on the east side of the South Bay.

In the absence of a major, coordinated control effort such as the ISEP, involving all marshland owners and managers, control or eradication of *Spartina* species will be ineffective and re-infestation of controlled areas will be unavoidable. Information gathered from Washington State, which has a large-scale infestation of *Spartina alterniflora,* dramatically demonstrates that without immediate initiation of extensive control efforts, we could expect large-scale conversion of tidal flats to homogenous stands of exotic cordgrass. This will drastically alter the vegetative composition of marshes and change marsh hydrology and ecology. Furthermore, since newly restoring unvegetated tidal areas are especially vulnerable to infestation with exotic cordgrasses, all future restoration projects are at risk of invasion unless control is successful.

Control of exotic cordgrass species is necessary to protect the remaining tidal marshes in the San Francisco Bay estuary for the benefit of endemic endangered species such as the California clapper rail (*Rallus longirostris obsoletus*) and the salt marsh harvest mouse (*Reithrodontomys raviventris*). Mudflats must also be protected from infestation, as exotic cordgrass species would reduce the amount of foraging habitat available to migrating and wintering shorebirds and

waterfowl which depend on the San Francisco Bay estuary for this resource.

The ISEP is vitally important for successful coordination of a Bay-wide effort to control exotic cordgrass species, therefore the Refuge strongly supports continued funding and activities of the ISEP. If you have any questions, please contact Joy Albertson, of my staff, at (510)792-0222.

Sincerely,

Margaret T. Kolar

Margaret T. Kolar
Refuge Manager

State of California • The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Rusty Areias, Director

Silverado District
20 East Spain Street
Sonoma, California 95476
(707) 938-1519

May 4, 2000

Nadine Hitchcock
Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, California 94612

Dear M. Hitchcock:

This letter is express our full support to the Coastal Conservancy effort towards developing the organization and funding proposal through the CalFed grant program to develop partnerships with landholding agencies at local, State and Federal levels (USFWS) to eradicate. contain or control the non-native introduced cordgrass species (Spartina spp.) in the San Francisco Bay - Delta estuary.

As a resource management agency, the California Department of Parks and Recreation is committed to the preservation, restoration and enhancement of coastal wetlands. The exotic populations of Spartina within Southampton Bay Natural Preserve at Benicia State Recreation Area jeopardize the integrity of this significant wetland. We enthusiastically endorse the partnership of the Conservancy. East Bay parks, US Fish and Wildlife Service and the San Francisco and the San Francisco Estuary Institute proposal to monitor, map; research and control the spread of the non-native Spartina species. This proposal is consistent with our vision of restoring the health of wetlands of the San Francisco-Delta Estuary ecosystem to the benefit of both wildlife and human activities. We seek inclusion in this partnership at some level to accomplish the regional goal of eliminating non-native Spartina species and their impacts on the San Francisco-Delta Estuary.

Thank you for your consideration.

Sincerely,

Jeffrey Bovee
District Superintendent

SAN FRANCISCO BAY JOINT VENTURE

COASTAL CONSERVANCY
1330 BROADWAY
SUITE 1100
OAKLAND, CA 94612

TEL 510 286-6767
FAX 510 286-0470

May 2, 2000

Nadine Hitchcock
coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612

RE: SF Bay Joint Venture Support for Non-native *Spartina* Control

Dear Nadine:

On behalf of the Management Board of the San Francisco Bay Joint Venture, I am writing in support of the Coastal Conservancy's CALFED application for finding to control, research and monitor introduced cordgrasses (*Spartina* spp.) in the San Francisco Bay-Delta Estuary. *Our* Board voted unanimously to support the finding of such critical efforts at its April 13 meeting.

The San Francisco Bay Joint Venture is a partnership of twenty-five public agencies, environmental organizations, business groups and agricultural interests working cooperatively to protect, restore, increase and enhance wetlands, riparian habitat and associated uplands throughout the San Francisco Bay Region. Non-native cordgrasses directly threaten this stated goal and supporting objectives of the San Francisco Bay Joint Venture.

We are pleased that that the Phase I, pilot *Spartina* research/control program is underway, but recognize that this is only a first step to eradicate non-native cordgrasses, particularly *Spartina alterniflora*, that have been rapidly colonizing the mudflat and tidal marsh ecosystems in San Francisco Bay with devastating effect. Their continued spread threatens past and future marsh restoration projects throughout the region. An expanded regional effort to eradicate introduced *Spartina* species from the San Francisco Bay-Delta Estuary is essential to protect the habitat values and restoration goals for this estuary.

The San Francisco Bay Joint Venture as a whole, as well as every organizational member, strongly supports the continued regional effort to control introduced *Spartina* species in the San Francisco Bay-Delta Estuary.

Sincerely,

John Steere
Director

Support letters: JV CALFED support ltr.doc

1600 Broadway, Suirc *300*
Oakland, CA 94612-2100

t. 510.452.9261
f. 510.452.9266

www.savesfbay.org

May 2, 2000

Ms. Nadine Hitchcock
coastal Conservancy
1330 Broadway, Suite 1100
Oakland, **CA** 94612

Dear Ms. Hitchcock

I am **writing** to support the Coastal Conservancy's current CALFED funding application. If received, the funding would be used to control, research, and monitor non-native cordgrasses (*Spartina* spp.) introduced in the San Francisco Bay-Delta Estuary.

Save the Bay seeks to preserve, restore, and protect the San Francisco Bay-Delta Estuary as a healthy and biologically diverse ecosystem essential to the human and natural communities it sustains. **As** the region-wide membership organization devoted to protecting and restoring the Bay-Delta Estuary. Save the Hay is taking a leadership role in restoring wetlands habitat. Yet invasive cordgrasses such as *Spartina alterniflora* are rapidly colonizing in San Francisco Bay mudflats and tidal marshes, displacing critical habitat for wildlife and native plant species. Their continued spread threatens all past and future restoration projects in the area. **A** regional effort to eradicate introduced *Spartina* species from the San Francisco Bay-Delta Estuary is essential to protecting the habitat values and restoration goals for this estuary.

The rapid spread of *Spartina alterniflora* in the South and Central Bay—and the likelihood of its introduction in the North Bay and Delta--demands immediate action to protect San Francisco baylands from further degradation. Save the Bay strongly supports the continued regional effort to control introduced *Spartina* species in the San Francisco Bay-Delta Estuary.

Sincerely,

David Lewis
Executive Director

MAY - 8 2000

California Regional Water Quality Control Board
San Francisco Bay Region

Winston H. Hickox
Secretary for Environmental Protection

Internet Address: http://www.rwrcb.cagov
1515 Clay Street, Suite 1400, Oakland, California 94612
Phone (510) 622-2300 • FAX (510) 622-2460

Gray Davis
Governor

April 27, 2000

APR 28 2000

Nadine Hitchcock
California Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612

Dear Ms. Hitchcock,

Natural resource agencies in the San Francisco Bay interested in the preservation, restoration, creation, and enhancement of wetlands and their associated upland and transitional habitats are faced with a great deal of uncertainty regarding the continued spread of the introduced cordgrass ***Sparfina alterniflora.*** This species, which is native to the Gulf and Atlantic coast wetlands, tends to grow taller, denser, and farther out in the mudflats than the Pacific coast native ***Spartinafoliosa,*** and thus threatens to overtake the native plant species and threaten the native wildlife dependent on ***Sfoliosa.*** The present and long-term effects of *S.alterniflora* on species such as the endangered California Clapper Rail *(Rallus longirostris obsoletus*) are not known, and many questions regarding the future status of this bird and other sensitive tidal marsh species remain unanswered. Some professional botanists have gone so far as to suggest that no new restoration projects in the South Bay should be allowed until *S. alterniflora* is eradicated.

As the resource agencies attempt to rebuild lost and degraded wetlands, we need answers to the questions of whether *S.alterniflora* can be controlled and, if so, what are the best means by which to accomplish this control. Recent reports indicate that ***S.foliosa*** and *S. alterniflora* are hybridizing, thus making it increasingly difficult to distinguish between the *two* species. Given the importance of halting the spread of this invasive species as soon as possible, we fully support efforts to control, research, or monitor this invasive species in the San Francisco Bay. If you have any questions, I can be reached at 510-622-2324.

Sincerely,

Andrée Breaux

Andree Breaux, Ph.D.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne ***Street***
San Francisco, **CA 94105**

April 27, 2000

Nadine Hitchcock
State Coastal.Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612-2530

Dear Nadine:

I am writing to express my support for the Invasive Spartina Project, which I understand in one of the proposals under consideration for funding by the Bay Conservancy Program. EPA has been concerned about the spread of non-native Spartina species in the Bay, and share the notion that this could represent one of the major impediments to tidal marsh restoration in the Bay system.

Whatever your agency can do to assist with funding that will support research, eradication, and education about this issue will be greatly appreciated. I also can speak for the professional and dedicated efforts of Debra Smith, Dr. Josh Collins, and,some of the other collaborators in this project, who surely will do an excellent job of furthering the important work on Spartina control in the **SF** Bay area.

I thank you for your consideration of this proposal and my support for their cooperative eradication program. I can be reached at 415-744-1976 if you have any questions.

Sincerely,

Paul Jones
North Bay Coordinator

State of California The Resources Agency

Me'morandum

To : Ms. Nadine Hitchcock
California Coastal Conservancy
1330 Broadway, Suite 100
Oakland, California 94612

Date: April 28, 2000

From : Department of Fish and Game - Post Office Box 47, Yountville, California 94599

Subject : CalFed Application for Funding to Control Introduced Cordgrasses

The Department of Fish and Game is writing in support of the Conservancy's CalFed application for funding to control introduced cordgrasses in San Francisco Bay Estuary, particularly smooth cordgrass (*Spartina alterniflora*). Smooth cordgrass poses a potentially significant threat to the estuarine ecosystem by converting shallow intertidal habitats to vegetated marsh and altering marsh hydrology. Its invasive characteristics pose a significant threat to newly restored tidal habitats. The species is spreading rapidly within the bay and significant control efforts are needed to keep this species from becoming established in San Pablo and Suisun bays. CalFed currently offers the only funding source for such an effort. With the collaborative efforts of Team Spartina and its cooperating agencies, there is an organized program for an effective control effort.

We look forward to working with the Conservancy and Team Spartina to achieve control of this invasive pest plant.

If you have any questions regarding our comments, please contact Mr. Carl Wilcox, Habitat Conservation Manager, at (707) 944-5525.

Robert W. Floerke
Regional Manager
Central Coast Region

MAY - 1 2000

Conserving California's Wildlife Since 1870

Golden Gate Audubon Society

2530 San Pablo Avenue, Suite G ▪ Berkeley, CA **94702** ▪ Phone: (510) **843-2222** ▪ **Fax:** (510) **843-5351**

Americans Committed to Conservation ▪ A Chapter of the National Audubon Society

April 28, 2000

Nadine Hitchcock
Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA **94612**

Dear Ms. Hitchcock

The Golden Gate Audubon Society strongly supports the Coastal Conservancy's CALFED application for funding to control, research and monitor introduced cordgrasses *(Spartinu* spp.) in the San Francisco Bay-Delta Estuary.

As you may know, the National Audubon Society and its eight Bay Area Audubon chapters, including Golden Gate Audubon, have made the implementation of the Baylands Ecosystem Goals project one of our priorities. The success of such an endeavor, however, is severely threatened by the current invasion of exotic cordgrass species such as *Spartina alterniflora.*

All four species of introduced cordgrass displace native salt marsh vegetation. Because these cordgrass species can go into lower tidal elevations than our native cordgrass this invasion threatens to overwhelm our tidal mudflats. These mudflats provide essential habitat to the one million shorebirds that visit our Bay every year. The exotic cordgrass may also choke the tidal channels used by the endangered California Clapper Rail.

A regional effort to eradicate introduced *Spurtinu* species from the San Francisco Bay-Delta Estuary is essential to protect the Bay's tidal wetland and mudflat habitat values and to ensure that the restoration envisioned by the Bayland Ecosystem Goals Project is meaningful.

The Golden Gate Audubon Society strongly supports the continued regional effort to control introduced *Spurtinu* species *in the* San Francisco Bay-Delta Estuary.

Sincerely,

Arthur Feinstein
Executive Director

EAST BAY REGIONAL PARK DISTRICT

May 9, 2000

Ms. Nadine Hitchcock
California Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612

Dear Ms. Hitchcock:

East Bay Regional Park District (EBRPD) is pleased to support the California Coastal Conservancy's application to CALFED for non-native *Spartina* eradication on San Francisco Bay.

The District initiated a non-native *Sparfina* control program in 1996 to address degradation being caused by *Sparfina* species to the 300+ acres of tidal wetlands owned and/or managed by EBRPD. These wetlands include two recently restored sites, Cogswell Marsh and Oro Loma Marsh at Hayward Regional Shoreline.

The District realizes that left unchecked, non-native *Spartina* poses a serious threat to native wading bird habitat as well as intertidal habitat crucial to the recovery of several **listed** fish species.

EBRPD is very much aware *of* the need to establish a regionally coordinated eradication program to preserve the critical wetland and tidal habitat. The regionally coordinated Introduced *Sparfina* Eradication Project (ISEP) being proposed is well conceived with-realistic goals and time lines and will bring a strong funding commitment essential for the preservation *of* wetlands in the San Francisco Bay estuary. The District supports and anticipates participating in the program.

I heartily support and strongly urge CALFED to fund the Coastal Conservancy's Introduced *Spartina* Eradication Project.

Sincerely,

Pat O'Brien
General Manager

2950 Peralta Oaks Court P.O. Box 5381 Oakland, CA 94605-0381
ph 510 635-0135 fax 510 569-4319 rec 510 633-0460 www.ebparks.org

United States Department of the Interior

NATIONAL PARK SERVICE
GOLDEN GATE NATIONAL RECREATION AREA
FORT MASON, SAN FRANCISCO, CALIFORNIA 94123

IN REPLY REFER TO:

May 9,2000

Nadine Hitchcock
Coastal Conservancy
1330 Broadway, Suite 110
Oakland, California 94612

Dear Ms. Hitchcock:

This letter is to enthusiastically convey support to the Coastal Conservancy's efforts toward developing multi-agency partnerships *to* control the spread of invasive exotic cordgrass (*Spartina alterniflora*) in the San Francisco Bay - Delta *estuary*. The Golden Gate National Recreation Area (GGNRA) recognizes the importance of establishing an integrated pest management strategy to address the spread of this aggressive species. Without a systematic Bay-wide control program, valuable wetland resources will degrade, and individual containment efforts will continue to be ineffective. and remain susceptible to reinfestations.

The GGNRA. in partnership with the Golden Gate Parks' Association (GGNPA). has recently transformed 100-acres of degraded parkland to create a 20-acre tidal marsh and *to* restore 15-acres of bay-front dunes. More than 22 wetland plant species have been re-introduced into the tidal marsh. including several rare species. The establishment of introduced cordgrass threatens this multi-million dollar effort to recreate a functioning wetland community. Populations of introduced cordgrass have established both north and south of the Golden Gate, and recruitment of seedlings into the Crissy Field marsh is inevitable. However, the proposed Coastal Conservancy research, education and control efforts will provide valuable resources to the resource managers of the park To date, Coastal Conservancy staff have linked the park with local researchers and provided valuable guidance regarding effective detection and monitoring efforts.

The GGNRA strongly supports the Coastal Conservancy's regional control efforts of *Spartina alterniflora*. Please contact me at (415) 561-4938 if you have any questions.

Sincerely,

Terri Thomas
Division Chief for Natural Resources and Science

* **Date : *05/02/00***
* **Name :Coastal Cons.**
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* **156,157,105,158,159,107**

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2118 Milvia Street
Berkeley CA 94704-1113

Diane Holmes
City Clerk
City of Richmond
City Hall
P. O. Box 4046
Richmond CA 94804-0046

Barron McCoy
Development Services Dir.
City of San Pablo
City Hall
One Alvarado Square
San Pablo CA 94806-5917

Robett Brown
Community Development Director
City of San Rafael
City Hall
P. O. Box 151560
San Rafael CA 94915-1560

Edmund H. San Diego
City Manager/City Clerk
City of Belvedere
City Hall
450 San Rafael Avenue
Belvedere CA 94920-2336

Christine Bell
Town Clerk
Town of Corte Madera
Town Hall
300 Tamalpais Drive
Cotte Madera CA 94925-1492

--Vacant--
Town Clerk
Town of Fairfax
Town Hall
142 Bolinas Road
Fairfax CA 94930-1654

Sara Anna
Deputy City Clerk/Admin. Analyst
City of Cotati
City Hall
201 W. Sierra Avenue
Cotatl CA 94931-4217

Leslie Gould
Planning Director
City of Oakland
250 Frank Ogawa Plaza
Suite 3330
Oakland CA 94612

Patrick O'Connell
Auditor/Controller/
County of Alameda
County Administration Building
1221 Oak Street, Room 249
Oakland CA 94612-4222

Jacqueline L. Bucholz
City Clerk
City of Albany
City Hall
1000 San Pablo Avenue
Albany CA 94706-2226

Daniel Shaw
Planning Director
City of Richmond
City Hall
P. O. Box 4046
Richmond CA 94804-0046

Alex Hinds
Community Development Director
County of Marin
Civic Center
3501 Civic Center Drive, #308
San Rafael CA 94903-4112

Jeanne M. Leoncini
City Clerk
City of San Rafael
City Hall
P. O. Box 151560
San Rafael CA 94915-1650

Scott Anderson
Planning Director
Town of Tiburon
Town Hall
1505 Tiburon Boulevard
Tiburon CA 94920-2530

Joseph D. Netter
Citv Manager/Citv Clerk
City of Rohnert Park
City Hall
6750 Commerce Boulevard
Rohnert Park CA 94928-2411

Elizabeth Patterson
Planning Director
Town of Fairfax
Town Hall
142 Bolinas Road
Fairfax CA 94930-1654

Dennis A. Dorch
Planning Director
Citv of Cotati
City Hall
201 W. Sierra Avenue
Cotati CA 94931-4217

Ceda Floyd
City Clerk
City of Oakland
City Hall
No. 1 City Hall Plaza, 2nd fl.
Oakland CA 94612-1923

Sherry M. Kelly
Citv Clerk
City of Berkeley
1900 Addison Street, 1st Flr.
Berkeley CA 94704-1102

Ann Chaney
Comm. Dev. & Environ. Resources Dir.
City of Albany
City Hall
1000 San Pablo Avenue
Albany CA 94706-2226

Genoveva Calloway
City Clerk
City of San Pablo
City Hall
One Alvarado Square
San Pablo CA 94806-5917

Michael J. Smith
County Clerk
County of Marin
Civic Center
3501 Civic Center Drive, #247
San Rafael CA 94903-4189

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Planning Consultant
City of Belvedere
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450 San Rafael Avenue
Belvedere CA 94920-2336

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Town Clerk
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Town Hall
1505 Tiburon Boulevard
Tiburon CA 94920-2530

Wendie Schulenburg
Planning & Comm. Dev. Dir.
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City Hall
6750 Commerce Boulevard
Rohnett Park CA 94928-2486

Phil Gorny
Town Administrator
Town of Fairfax
Town Hall
142 Bolinas Road
Fairfax CA 94930-1654

Jean Bonander
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City of Larkspur
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400 Magnolia Avenue
Larkspur CA 94939-2035

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Plznning Director.
City of Larkspur
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400 Magnolia Avenue
Larkspur CA 94939-2035

Shirley Gremmels
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900 Sherman Avenue
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Petaluma CA 94953-0061

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P. O. Box 1279
Sausalito CA 94966-1279

--Vacant--
Community Development Director
City of Campbell
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70 N. First Street
Campbell CA 95008-1436

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Planning Div. Mgr.
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7351 Rosanna Street
Gilroy CA 95020-6141

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18041 Saratoga-Los Gatos Road
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Milpitas CA 95035-5411

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Comm. Dev. [Planning] Director
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Novato CA 94945-3231

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San Anselmo CA 94960-2613

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Director of Environmental Services
Town of Corte Madera
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Planning Director
City of Cupertino
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10300 Torre Avenue
Cupertino CA 95014-3202

Norman S. Allen
Community Development Director
City of Gilroy
City Hall
7351 Rosanna Street
Gilroy CA 95020-6196

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City Planner
City of Monte Sereno
City Hall
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Monte Sereno CA 95030-4210

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Planning Director
City of Milpitas
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Milpitas CA 95035-5411

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Comm. Dev. [Planning] Director
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Civic Center
17555 Peak Avenue
Morgan Hill CA 95037-4128

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Mill Valley CA 94942-1029

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Petaluma CA 94953-0061

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Town Hall
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Cupertino CA 95014-3202

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City Clerk
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Santa Clara CA 95050-3713

Geoffrey 'Geof' Goodfellow
Planning Director
City of Santa Clara
Citv Hall
1500 Warburton
Santa Clara CA 95050-3713

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City Clerk
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13777 Fruitvale Avenue
Saratoga CA 95070-5151

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Comm. Dev. Director
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13777 Fruitvale Avenue
Saratoga CA 95070-5151

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Director of Planning
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801 N. First Street
San Jose CA 95110-1704

Patricia L. O'Hearn
City Clerk
City of San Jose
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801 N. First Street
San Jose CA 95110-1704

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Director, Env. Resources Agency (Acting)
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County Government Center
70 W. Hedding Street, E. Wing
San Jose CA 95110-1705

Brenda Davis
County Clerk/Recorder
County of Santa Clara
County Government Center, E. Wing
70 W. Hedding Street, 10th Fl.
San Jose CA 95113-

Kenneth R. Blackman
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P. O. Box 1678
Santa Rosa CA 95402-1678

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Permit & Resource Mgmt. Director
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2550 Ventura Avenue
Santa Rosa CA 95403-2829

Eeve T. Lewis
County Clerk
County of Sonoma
2300 County Center Drive
Santa Rosa CA 95403-3013

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P. O. Box 217
Cloverdale CA 95425-0217

Michele P. Winterbottom
City Clerk
City of Cloverdale
City Hall
P. O. Box 217
Cloverdale CA 95425-0217

Maria Curiel
City Clerk
City of Healdsburg
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P. O. Box 578
Healdsburg CA 95448-0578

Richard Spitler
Planning Director
City of Healdsburg
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P. O. Box 578
Healdsburg CA 95448-0578

D. Kenyon Webster
Planning Director
City of Sebastopol
714 Johnson Street
Sebastopol CA 95472-3700

Hollie Fiori
City Clerk
City of Sebastopol
City Hall
7120 Bodega Avenue
Sebastopol CA 95472-3700

Eleanor Berto
City Clerk
City of Sonoma
City Hall
No. 1 the Plaza
Sonoma CA 95476-6690

David Goodisen
City Planner
City of Sonoma
City Hall
No. 1 The Plaza
Sonoma Ca 95476-6690

Paul Berlant
Town Manager
Town of Windsor
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P.O. Box 100
Windsor CA 95492-0100

Peter Chambetiin
Planning Director
Town of Windsor
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P.O. Box 100
Windsor CA 95492-0100

Janice Beaman
City Clerk
City of Dixon
City Hall
600 E. 'A Street
Dixon CA 95620-3619

--Vacant--
Comm. Dev. [Planning] Director
City of Dixon
City Hall
600 E. 'A Street
Dixon CA 95620-3619

David Harzoff
Economic Development Coord.
City of Dixon
City Hall
600 E. 'A' Street
Dixon CA 95620-3697

Kathleen M. Andronico
City Clerk
City of Vacaviile
City Hall
650 Merchant Street
Vacaville CA 95688-6908

Linda Celestre
Community Services Director
City of Vacaville
City Hall
650 Merchant Street
Vacaville CA 95688-6908

Ron Rowland
Planning Director
City of Vacaville
City Hall
650 Merchant Street
Vacaville Ca 95688-6908

.Land Use Checklist

All applicants must fill out this Land Use Checklist for their proposal. Applications must contain answers to the following questions to be responsive and to be considered for funding. *Failure to answer these questions and include them with the application will result in the application being considered nonresponsive and not considered for funding.*

1. **Do** the actions in ***the*** proposal involve physical changes to the land (i.e. grading, planting vegetation, **or** breeching levees) **or** restrictions in land **use** (i.e. conservation easement **or** placement **of** land in a wildlife refuge)?

   X
   YES _____ **NO**

2. **If NO** to # **1,** explain what type of actions are involved in the proposal (i.e., research only, planning only).

3. **If YES** to # 1, what is the proposed land use change **or** restriction under **the** proposal?
   Vegetation removal

4. **If** YES **to** # **1,** is the land currently under a Williamson Act contract?

   _____ **YES** X **NO**

5. If **YES** to # 1, answer the following:

   Current land use N/A
   Current zoning N/A
   Current **general** plan designation N/A

6. If **YES to #1,** is the land classified as Prime Farmland, Farmland of Statewide Importance **or** Unique Farmland on the Department of Conservation Important Farmland Maps?

   _____ **YES** X **NO** DON'T **KNOW** _____

7. If **YES to** # **1,** how **many** acres **of** land will **be** subject to physical change **or** land use restrictions under the proposal?
   Region wide program for intertidal zone of the bay. Possibly 10-20,000 (rough estimate)

8. If YES to # 1, is the property currently being commercially farmed **or** grazed?

   _____ **YES** X **NO**

9. If YES to **#S,** what are the number of employees/acre N/A
   the total number **of** employees N/A

D

10. Will the applicant acquire any interest in land under the proposal (fee title **or** a conservation easement)?

_____	X
YES	NO

11. What entity/organization will hold the interest? N/A

12. **If YES** to # **10,** answer the following:

Total number **of** acres to be acquired under proposal	-
Number **of** acres to be acquired in fee	-
Number of acres to be subject to conservation easement	-

13. **For** all proposals involving physical changes to the land **or** restriction in land **use,** describe what entity **or** organization will: **Regional program varies** by **over 1,000 sites.**

manage the property _____

provide operations and maintenance services _____

conduct monitoring _____

14. **For** land acquisitions (fee title **or** easements), will existing water rights also be acquired?

_____	X
YES	NO

15. **Does** the applicant propose any modifications to the water right **or** change in the delivery of the water?

_____	X
YES	NO

16. If **YES** to # **15,** describe N/A

E

coastal
Conservancy

Nadine Hitchcock
California Coastal Conservancy
1330 Broadway, 11th Floor
Oakland, CA 94612-2530

May 1,2000

Re: Calfed Bay Delta Ecosystem Restoration Program Grant Proposal

Dear City Planner or City Council Clerk,

This letter is to notify you that the California Coastal Conservancy, a state agency, is submitting a grant proposal to the Calfed Ecosystem Restoration Program. The Calfed program requires that all city planning departments and clerks of city councils within the geographic scope of the proposal be notified. The Coastal Conservancy is submitting a proposal to regionally coordinate efforts to map, monitor and control a nonnative invasive species that has numerous negative ecological impacts on tidal wetlands. Property within your city limits may or may not contain a population of the nonnative *Spurtina* species. Should this project be funded your city staff will be contacted regarding the details of this project.

Sincerely,

Nadine Hitchcock

Nadine Hitchcock
Program Manager

1330 Broadway, 11*th* Floor
Oakland, California 94612-2530
510·286·1015 ***Fax:***510·286·0470

Coastal
Conservancy
Bill Ahern
Executive Officer

Nadine Hitchcock
California Coastal Conservancy
1330 Broadway, 11th Floor
Oakland, CA 94612-2530

May 1, 2000

Re: Calfed Bay Delta Ecosystem Restoration Program Grant Proposal

To whom it may concern,

This letter is to notify you that the California Coastal Conservancy, a state agency, is submitting a grant proposal to the Calfed Ecosystem Restoration Program. The Calfed program requires that all counties within the geographic scope of the proposal be notified. The Coastal Conservancy is submitting a proposal to regionally coordinate efforts to map, monitor and control a nonnative invasive species that has numerous negative ecological impacts on tidal wetlands. Property within your city limits may or may not contain a population of the nonnative *Spartina* species. Should this project be funded your county staff will be contacted regarding the details of this project.

Sincerely,

Nadine P. Hitchcock

Nadine Hitchcock
Program Manager

1330 Broadway, 11th Floor
Oakland, California 94612-2530
510•286•4185 Fax: 510•286•0470

Coastal
Conservancy
Bill Ahern
Executive Officer

Bay Conservation and Development Commission
30 Van Ness Ave Room 2011
San Francisco, CA 94102

May 1, 2000

Re: Calfed Bay Delta Ecosystem Restoration Program Grant Proposal

To whom it may concern,

This letter is to notify you that the California Coastal Conservancy is submitting a grant proposal to the Calfed Ecosystem Restoration Program. Enclosed, please find a copy of the proposal. The Calfed program requires that all projects within BCDC's jurisdiction be notified. The Coastal Conservancy is submitting a proposal to regionally coordinate efforts to map, monitor and control a nonnative invasive species that has numerous negative ecological impacts on tidal wetlands Should this project be funded your city staff will be contacted regarding the details of this project.

Sincerely,

Nadine Hitchcock

Nadine Hitchcock
Program Manager

1330 Broadway, 11*th* Floor
Oakland, California 94612-2530
510•286•4185 *Fax:* 510•286•0470

coastal
Conservancy

Delta Protection Commission
14215 River Road
P.O. **Box 530**
Walnut Grove, CA 95690

May 1,2000

Re: Calfed Bay Delta Ecosystem Restoration Program Grant Proposal

To whom it may concern,

This letter is to notify you that the California Coastal Conservancy is submitting a grant proposal to the Calfed Ecosystem Restoration Program. Enclosed, please find a copy of the proposal. The Calfed program requires that all projects within DPC's jurisdiction be notified. The Coastal Conservancy is submitting a proposal to regionally coordinate efforts to map, monitor and control a nonnative invasive species of *Spartina* that has numerous negative ecological impacts on tidal wetlands Should this project be funded your city staff will be contacted regarding the details of this project.

Sincerely,
Nadine Hitchcock

Nadine Hitchcock
Program Manager

1330 Broadway, 11th Floor
Oakland, California 94612-2530
510-286-1015 *Fax*: 510-286-0470

Agreement No.: _____

Exhibit: A

STANDARD CLAUSES -
INTERAGENCY AGREEMENTS

Audit Clause. For Agreements in excess of $10,000, the parties shall be subject to the examination and audit of the State Auditor for a period of three years after final payment under the Agreement. (Government Code Section 8546.7).

Availability of Funds. Work to be performed under this Agreement is subject to availability of funds through the State's normal budget process.

Interagency Payment Clause. For services provided under this Agreement, charges will be computed in accordance with State Administrative Manual Sections 8752 and 8752.1.

Termination Clause. Either State agency may terminate this Agreement upon thirty (30) days' advance written notice. The State agency providing the services shall be reimbursed for all reasonable expenses incurred up to the date of termination.

Severability. If any provision of this Agreement is held invalid or unenforceable by any court of final jurisdiction, it is the intent of the parties that all other provisions of this Agreement be construed to remain fully valid, enforceable, and binding on the parties.

Y2K Language. The Contractor warrants and represents that the goods or services sold, leased, or licensed to the State of California, its agencies, or its political subdivisions, pursuant to this Agreement are "Year 2000 compliant" For purposes of this Agreement, a good or service is Year 2000 compliant if it will continue to fully function before, at, and after the Year 2000 without interruption and, if applicable, with full ahility to accurately and unambiguously process, display, compare, calculate, manipulate, and otherwise utilize date information. This warranty and representation supersedes all warranty disclaimers and limitations and all limitations on liability provided by or through the Contractor.

K

APPLICATION FOR FEDERAL ASSISTANCE

OMB Approval No. 0348-0043

1. TYPE OF SUBMISSION: Application: ☐ Construction ☒ Non-Construction; Preapplication: ☐ Construction ☐ Non-Construction		2. DATE SUBMITTED: 5/15/00	Applicant Identifier
		3. DATE RECEIVED BY STATE	State Application Identifier
		4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

5. APPLICANT INFORMATION

Legal Name: California State Coastal Conservancy	Organizational Unit: Enhancement Program
Address (give city, county, State, and zip code): 1330 Broadway 11th Floor, Oakland, CA 94612	Name and telephone number of person to be contacted on matters involving this application (give area code): Nadine Hitchcock 510-286-4176
6. EMPLOYER IDENTIFICATION NUMBER (EIN): 94-6001347	7. TYPE OF APPLICANT: (enter appropriate letter in box) A

8. TYPE OF APPLICATION:
☐ New ☒ Continuation ☐ Revision

If Revision, enter appropriate letter(s) in box(es) ☐ ☐

A. Increase Award B. Decrease Award C. Increase Duration
D. Decrease Duration Other (specify):

7. TYPE OF APPLICANT: (enter appropriate letter in box) A

A. State — H. Independent School Dist.
B. County — I. State Controlled Institution of Higher Learning
C. Municipal — J. Private University
D. Township — K. Indian Tribe
E. Interstate — L. Individual
F. Intermunicipal — M. Profit Organization
G. Special District — N. Other (Specify) _____

9. NAME OF FEDERAL AGENCY: USFWS - Calfed Bay Delta Program

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: XX – XXX

TITLE:

AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc.): 10 Bay Area Counties

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT: Invasive Spartina Project (ISP)

12. PROPOSED PROJECT		13. CONGRESSIONAL DISTRICTS OF: 8 9 10 12 13 14 15 16
Start Date: 2-01	Ending Date: 2-03	a. Applicant: Barbara Lee
		b. Project

15. ESTIMATED FUNDING:

a. Federal	$ .00
b. Applicant	$ 200,000 .00
c. State	$ 0 .00
d. Local	$ 0 .00
e. Other In-Kind	$ 352,840 .00
f. Program Income	$ .00
g. TOTAL	$ 552,400 .00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?

a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON
DATE _____

b. NO. ☐ PROGRAM IS NOT COVERED BY E. O. 12372
☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?
☐ Yes If "Yes," attach an explanation. ☒ No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Type Name of Authorized Representative	b. Title	c. Telephone Number
Marcia Grimm	Senior Staff Counsel	(510) 286-1084
Signature of Authorized Representative		d. Date Signed: 5-11-00

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Standard Form 424 (Rev. 7-97)

Attachment L

Calfed's E-mail **Response to ISP's** Question on **Permission** for **Access.**

Should your proposal be funded, we will work with you to ensure a reasonable process for obtaining permission for access is identified. We realize with this type of project that specific access sites may not all be identified up front. Provide as much detail as possible on potential needs for permission for access.

On local notification, the intent of the requirement is to notify local land use entities of potential on-the-ground activities occurring within their jurisdiction. Since your proposal would include mapping, monitoring and control measures, you will be required to the cities or counties where you expect the activities to occur.

At 11:11 PM 4/10/00 -0400, you wrote:
>I am submitting a next-phase proposal for a regional, aquatic invasive
>species project that proposes mapping, monitoring and control measures along
>the shoreline (marshes and mudflats) for 10 bay area counties. I have a
>question as to how I should address the requirements regarding landowner
>permission for access since it will be impossible for me to notify or even
>identify all landowners before the grant or even within the allotted 30 days
>of notification of approval.
>
>Also, regarding local notification. I will be notifying and sending a copy of
>the proposal to BCDC and the Delta Protection Commission. Am I required to
>send the proposal to all ten counties also? Am I required to send the
>proposal to every city planning department and clerk of each City Council as
>the proposal suggests.
>
>Thank you for addressing these concerns.
>
>Debra Smith
>Introduced Spartina Eradication Project
>California Coastal Conservancy
>437 Albemarle St.
>El Cerrito, Ca 94530
>510-526-4628

>dbrsmt@aol.com

Rebecca Fawver
Restoration Coordination Program
(916) 654-1334

---------- Headers ----------

Return-Path: <ecopsp@water.ca.gov>
Received: from rly-zd03.mx.aol.com (rly-zd03.mail.aol.com [172.31.33.227]) by air-zd04.mail.aol.com (v70.20) with ESMTP; Thu, 13 Apr 2000 14:14:45 -0400
Received: from zephyr.water.ca.gov (zephyr.water.ca.gov [136.200.84.6]) by rly-zd03.mx.aol.com (v71.10) with ESMTP; Thu, 13 Apr 2000 14:14:09 -0400
Received: from conveyance.water.ca.gov (conveyance.water.ca.gov [136.200.149.161])
by zephyr.water.ca.gov (8.9.3/8.9.3) with ESMTP id LAA28324
for <DbrSmt@aol.com>; Thu, 13 Apr 2000 11:13:46 -0700 (PDT)
Received: from bdoc32 (localhost [127.0.0.1])
by conveyance.water.ca.gov (8.9.3+Sun/8.9.1) with ESMTP id LAA28426
for <DbrSmt@aol.com>; Thu, 13 Apr 2000 11:13:56 -0700 (PDT)
Message-Id: <4.2.0.58.20000413110239.00a5e8d0@conveyance>
X-Sender: ecopsp@conveyance
X-Mailer: QUALCOMM Windows Eudora Pro Version 4.2.0.58
Date: Thu, 13 Apr 2000 11:18:49 -0500
To: DbrSmt@aol.com
From: Public Email <ecopsp@water.ca.gov>
Subject: Re: PSP question
In-Reply-To: <fb.44f3f8e.2623f1f6@aol.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"; format=flowed

Environmental Compliance Checklist

All applicants must fill out this Environmental Compliance Checklist. Applications must contain answers to the following questions to be responsive and to be considered for funding. *Failure to answer these questions and include them with the application will result in the application being considered nonresponsive and not considered for funding.*

1. Do any of the actions included in the proposal require compliance with either the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), **or** both?

X

YES **NO**

2. If you answered yes to **# 1,** identify the lead governmental agency for CEQA/NEPA compliance

California Coastal Conservancy NEPA Lead: USFWS

Lead Agency

3. If you answered no to **# 1,** explain why CEQNNEPA compliance is not required for the actions in the proposal.

N/A

4. **If** CEQA/NEPA compliance is required, describe how the project will comply with either **or** both **of** these laws. Describe where the project is in the compliance process and the expected date of completion.

ISP will be preparing a program level joint EIR/EIS document. A final copy of the Environmental Services Request will be distributed by June 1, 2000. Completion of the EIR/EIS is anticipated by June 1, 2001.

5. Will the applicant require access across public **or** private property that the applicant does not own to accomplish the activities in the proposal?

'X

YES NO

If yes, the applicant must attach written permission for access from the relevant property owner(s). Failure to include **written** permission for access may **result** in disqualification of the proposal during the review process. **Research** and monitoring field projects for which specific field locations have not been identified will be required to provide access needs and permission **for** access with *30* days **of** notification of approval.

In response to ISP's concern regarding the projects ability to meet this requirement due to the large geographic scope of the project and thousands of potential property owners , Calfed stated that they would be willing to work with us on establishing an approach for obtaining permission. Rights of entry permits are currently being obtained from a number of public agencies affected by ISEP and will make a good faith effort at meeting Calfed's access requirement.

Please indicate what permits or other approvals may be required for the activities contained in your proposal. Check all boxes that apply.

LOCAL		
Conditional use permit	—	
Variance	—	
Subdivision Map Act approval	—	
Grading permit	—	
General plan amendment	—	
Specific plan approval	—	
Rezone	—	
Williamson Act Contract cancellation	—	
Other _____ (please specify)	—	
None required	X	
STATE		
CESA Compliance	X	(CDFG)
Streambed alteration permit	—	(CDFG)
CWA § 401 certification	—	(RWQCB)
Coastal development permit	—	(Coastal Commission/BCDC)
Reclamation Board approval	—	
Notification	—	(DPC, BCDC)
Other NPDES permit (please specify)	—	ISP will be applying to the Regional Water Quality Control Board for a NPDES permit.
None required	—	
FEDERAL		
ESA Consultation	X	(USFWS)
Rivers & Harbors Act permit	—	(ACOE)
CWA § 404 permit	—	(ACOE)
Other _____ (please specify)	—	
None required	—	

A complete Environmental Requirements Report for ISP has been prepared and copies are available. A copy has been sent to Kim Webb, contracting agent for USFWS.

DPC = Delta Protection Commission
CWA = Clean Water Act
CESA = California Endangered Species Act
USFWS = U.S. Fish and Wildlife Service
ACOE = U.S. Army Corps of Engineers

ESA = Endangered Species Act
CDFG = California Department of Fish and Game
RWQCB = Regional Water Quality Control Board
BCDC = Bay Conservation and Development Comm.